

Johannes Forer ejus Liber

A
POCKET BOOK.
Containing severall Choice
Collections

in

Arithmetic. Navigation.
Astronomy. Astrology.
Geometry. Geography.
Surveying. Measuring.
Dialling. Gaugeing

Printed for Jen. Seller
and Cha. Price

at y^e Hermitage in Wapping
& Phil: Lea at y^e Atlas & Her-
cules in Cheap-side London

[1700.]



351

*The Description and Use of the Thirty-
Years Almanack.*

EACH Month containeth 8 Columns; the first sheweth the Day of the Month, the second (having the Dominical Letter) shews the Days of the Week, the third shews several Remarkable Days, the fourth shews the Sun's place in the Ecliptick, the fifth shews the Rising of the Sun, the sixth the Setting of the Sun, the seventh shews the Days of the Month, according to the Foreign Account.

Examples of the Use of each Column.

1. To know the Day of the Month.

This is the chief, and most useful Observation of any Almanack, and may as well be performed by this, as by any other. To this purpose, you must first know the Dominical (or Sunday) Letter for the Year proposed; which you may easily find by the Table foregoing the Almanack: By which having found the Dominical Letter for the Year required, then considering with your self, whether the Day of the Month you seek for be in the beginning, middle, or end of the Month; then from the Dominical or Sunday Letter found, reckon to the Day of the Week proposed, either *Monday, Tuesday*, or any other Day whatsoever it is; and right against that day of the Week, you shall find the Day of the Month.

Only note; That if there be two Dominical Letters (as you will find in every Leap-Year) then the

A

first

first of them you must use only to the 24th Day of February, and the other all the Year after.

Example.

In the Year 1700 (being Leap-Year) the Dominical Letters are G F; therefore the first Sunday in January is the 7th Day of the Month; the first Sunday in February is the 4th Day of the Month; and the first Sunday in March is on the 3d Day: The same is to be understood all the Year after.

2. To know what day of the Week any Notable Day will fall upon that Year.

First find the Dominical Letter, (as is before directed) then look for the same in the Month required, next before the Day you desire; and so from thence count the Days of the Week, till you come to the Day desired.

Example.

If you would know what Day of the Week Lady-day (or the Annunciation of the Blessed Virgin) falls in the Year 1700: the Dominical Letter is F, which is one Day before the said day; therefore it falls on a Monday that Year.

3. To find the Sun's Place in the Ecliptick.

The Sun's Place is shewed in the 4th Column of the Almanack, wherein you will find two Columns of Figures; the first shews the Degreers, the second the Minutes of any Sign that the Sun is in, and the Character of the Sign you will have in the same Column. As in the Month of January, right against the 11th Day of the Month, you will find the Sun to be in

1 De-

1 Degree 57 Minutes of *Aquarius*: The same is to be understood of the rest.

4. *To find the Rising and Setting of the Sun.*

The Rising and Setting of the Sun you will find in the fifth and sixth Columns of the Almanack, under their proper Titles; each Column having two smaller Columns of Figures, the first shews the Hours, and the second the Minutes of the Suns Rising or Setting. As for instance, Right against the 11th of *January* you will find, in the Column under the Title of *Suns Rising*, 7 Hours, 55 Minutes; which shews that the Sun riseth at 55 Minutes past 7 of the Clock in the Morning. And in the next Column, under the Title of *Suns Setting*, you will find 04 : 05; which shews that the Sun sets at 5 Minutes past 4 in the Evening.

And here note, If you double the Rising of the Sun, it shews the length of the Night, and if you double the Setting of the Sun, it will shew you the length of the Day.

As for Example.

If you double 7 Hours 55 Minutes, it makes 15 Hours and 50 Minutes, which is the length of the Night: And if you double the Hours of Sun Setting, being 4 Hours 5 Minutes, it makes 8 Hours 10 Minutes, the length of the Day; which Hours and Minutes of the length of the Day and Night makes just 24 Hours.

The Use of the Table for finding Easter for ever, by the Golden Number and Dominical Letter.

Having found the Golden Number by the precedent Table, as also the Dominical Letter, then seek the

Golden Number in the first Column on the left hand, and the Dominical Letter on the head of the Table ; and in the common Angle of meeting of these 2 Lines, you will find the Month and Day *Easter* will fall on that Year.

• *Example.*

In the Year 1702, the Golden Number is 12, and the Dominical Letter D. I find 12 in the first row on the left hand ; against which, on the right hand, under the Letter D, I find that *Easter-day* will be that Year on the fifth day of *April*.

A Description of the Golden Number, Cycle of the Sun, Epact, Dominical Letter, and Leap-Year.

The Prime, or Golden Number, is a Circle, or the Revolution of 19 Years ; in which space of time it was supposed by the Antients, that all the Lunations and Aspects between the Sun and Moon, did return to the same place they were 19 Years before : It being chiefly to find the Change, Full, and Quarters of the Moon.

Of the Cycle of the Sun, and Dominical Letter.

The Cycle, or Circle of the Sun, is a Revolutionary Number of 28 Years ; in which time there is a perfect change of all the Sunday Letters for every Year, and makes its Periodical Revolution in 28 years. By help of which is known the true order of the Sunday Letters, A, being placed against the first day of *January*, and the rest in their order to the Years end:
And

And every Month beginneth with the first Letter of each word in this short Distich;

*At Dover dwells George Brown Esquire,
Good Christopher Finch, and David Frier.*

Of the Epact.

The Epact is a Number not exceeding 30, because the Moon, between Change and Change, never exceeds 30 Days; and thereby the common Lunar Year, consisting of 12 Months, is less than the Solar Year by 11 Days; for to every Lunar Month is accounted but 29 days and a half, so that a Lunar Year consists of 354 Days, and the Solar Year consists of 365 days; the difference is 11 days, which is called the Epact.

Of the Leap-Year.

The Leap-Year is every fourth Year, which hath one day more in it than a common Year: This Day is made up in four Years, by the odd six hours that are over and above 365 Days; which Day is added after the 24th Day of *February*; so that in the Leap-Year *February* hath 29 Days. And here note, that the Prime and Dominical Letter, and the Cycle of the Sun change the first of *January*, and the Epact the first of *March*.

Short Rules to find the Golden Number, Dominical Letter, Epact, &c. in short Distichs.

To know if it be Leap, or what Year past.

Divide

Divide the Year by 4, what's left shall be
For Leap-Year Nought, for past 1, 2, or 3.

Example.

Anno 1706. For brevity divide only the latter part
of this Number, (the Hundreds omitted) which is
6 by 4, and there remains 2, which shews it to be
the second Year after Leap-Year.

To find the Dominical, or Sunday Letter.

Divide the Year, its 4th, and 4 by 7,
What's left substract from 7, the Letters given,
A. 1. B. 2. C. 3. D. 4. E. 5. F. 6. G. 7.

Example.

The Year of our Lord ————— 1702
Its fourth ————— 423
To both which add ————— 4

7)2129(34
21

c29

28

Which substracted from 7, remains 6, from which
take 4 for Leap-Year, and it gives 2 for the Second
Year.

(7)

*To find the Golden Number, Cycle of the Sun,
and Indiction.*

*When 1, 9, 3, to th' Year hath added been,
Divide by 19, 28, 15.*

Example.

To 1701 add 1, which is 1702: Divide that by 19, and there remains 11, which is the Golden Number for that Year. Again to 1701 add 9, and the Sum is 1710; divide by 28, the Residue is 2, the Cycle of the Sun for that Year. Lastly, To 1701 add 3, the Sum is 1704; which divided by 15, the Remainder is 9, which is the Indiction for that Year.

*The Prime and Golden Number being given, to
find the Epact.*

*Divide by 3, for each one left, add Ten.
30 reject, the Prime makes Epact then.*

Example.

Anno 1701 the Golden Number is 11, which divided by 3, and there remains 2; therefore 10 times 2 is 20, which added to the Epact 11, the Sum is 31; from which subtract 30, the Remainder is 1, the Epact for that Year 1701.

*By the 19 Epacts, to find the day of Easter-
Limit from the beginning of March inclusively.*

*The Epact take from 47 but two,
The greatest take from 77, 'twill do.*

Example.

Example.

Anno 1701 the Epact being 1, I substract it from 47, the Residue 46 is the Easter Limit: Anno 1701 that is April the 15th, reckoned from the beginning of March inclusively.

But when the Epact is 28, or 29, it must be substracted from 77, that so the Limit may remain, and the next Sunday after the Limit is Easter-day.

Easter-Limit, and the Dominical Letter being given; to find Easter-day.

*The Letter more by 4 from Limit take,
What's left from nearest sevens, shall Easter make.*

Or thus;

Take the Number of the given Letter more by 4 from the given Limit, and the Residue from the greatest Sum of sevens, the last Remainder added to the Limit (the Sum) or its excess above 31, is Easter-day in March or April.

Example.

Anno 1701, the Letter E, which is 5, more by 4, is 9, which taken from the Limit 46, the Residue is 37; this taken from the nearest greater Sum of sevens 42, there remains 5; which added to the Limit 46, the Sum is 51; the excess of which above 31 is 20: Therefore the 20th Day of April, Anno 1701, is Easter-day.

For the days of the Months on which the Sun entereth the 12 Signs.

*Twice 9, twice 10, four 12, 11,
Then 10, then 9, then 8 or 7.*



A plain & ready Table to finde Easter day for
ever, by the Golden Number, & Sunday Letter..

| G. N | A | B | C | D | E | F | G |
|-------|---------|---------|---------|---------|---------|---------|---------|
| I | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 6 | Apr. 7 | Apr. 8 |
| II | Mar. 26 | Mar. 27 | Mar. 28 | Mar. 29 | Mar. 30 | Mar. 31 | Apr. 1 |
| III | Apr. 16 | Apr. 17 | Apr. 18 | Apr. 19 | Apr. 20 | Apr. 21 | Apr. 22 |
| IV | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 15 |
| V | Mar. 26 | Mar. 27 | Mar. 28 | Mar. 29 | Mar. 30 | Mar. 31 | Apr. 1 |
| VI | Apr. 16 | Apr. 17 | Apr. 18 | Apr. 19 | Apr. 20 | Apr. 21 | Apr. 22 |
| VII | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 15 |
| VIII | Apr. 23 | Apr. 24 | Apr. 25 | Apr. 26 | Apr. 27 | Apr. 28 | Apr. 29 |
| IX | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 15 |
| X | Apr. 2 | Apr. 3 | Mar. 28 | Mar. 29 | Mar. 30 | Mar. 31 | Apr. 1 |
| XI | Apr. 16 | Apr. 17 | Apr. 18 | Apr. 19 | Apr. 20 | Apr. 21 | Apr. 22 |
| XII | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 15 |
| XIII | Mar. 26 | Mar. 27 | Mar. 28 | Mar. 29 | Mar. 30 | Mar. 31 | Apr. 1 |
| XIV | Apr. 16 | Apr. 17 | Apr. 18 | Apr. 19 | Apr. 20 | Apr. 21 | Apr. 22 |
| XV | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 15 |
| XVI | Mar. 26 | Mar. 27 | Mar. 28 | Mar. 29 | Mar. 30 | Mar. 31 | Apr. 1 |
| XVII | Apr. 16 | Apr. 17 | Apr. 18 | Apr. 19 | Apr. 20 | Apr. 21 | Apr. 22 |
| XVIII | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 15 |
| XIX | Apr. 23 | Apr. 24 | Apr. 25 | Apr. 26 | Apr. 27 | Apr. 28 | Apr. 29 |

Take this for a General rule, $\frac{7}{7}$

The same day 7 weeks before Easter is Shrove Sunday
after Easter is Whitsunday

A fortnight before Shrove Sunday is Septuagesima
Whitsunday is Rogation Sunday

And if Sunday after Shrove Sunday is Quadragesima
Whitsunday is Trinity Sunday

Also whensoever the Golden Number is 3, 6, 9, 12, 15
or 18 Then the Epact is the same But

The Golden Number 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Then the Epact is 11 22 14 25 17 8 20 1 23 4 20 7 29

| Anno Domini | Dom Lett: | 2 ^d | 3 ^d | 4 th | The Use of <i>XXX</i> years Almanack |
|----------------|--------------|----------------|----------------|-----------------|--|
| 1700 | GF | 10 | 20 | 1 | To find <i>if</i> Dominical Letter for <i>if</i> year Required by the anexed Table which will be <i>if</i> Sunday Letter for the year and when it is Leap year then there are two Dominical Let- ters, the first of which serves from <i>if</i> beginning of the year to <i>S^t Mathias</i> day which is <i>if</i> 25 of February and <i>if</i> other all the Yeare after. |
| 1701 | E | 11 | 1 | 2 | |
| 1702 | D | 12 | 12 | 3 | |
| 1703 | C | 13 | 23 | 4 | |
| 1704 | BA | 14 | 4 | 5 | |
| 1705 | F | 15 | 15 | 6 | |
| 1706 | G | 16 | 26 | 7 | |
| 1707 | E | 17 | 7 | 8 | |
| 1708 | DC | 18 | 18 | 9 | |
| 1709 | B | 19 | 29 | 10 | |
| 1710 | A | 1 | 11 | 11 | |
| 1711 | G | 2 | 22 | 12 | To find the day of <i>if</i> Month. First find <i>if</i> Dominicall Letter for the year Required which will be <i>if</i> Sunday Let- ter for all that year |
| 1712 | FE | 3 | 3 | 13 | |
| 1713 | D | 4 | 14 | 14 | |
| 1714 | C | 5 | 25 | 15 | |
| 1715 | B | 6 | 6 | 16 | |
| 1716 | AG | 7 | 17 | 17 | |
| 1717 | F | 8 | 28 | 18 | |
| 1718 | E | 9 | 9 | 19 | |
| 1719 | D | 10 | 20 | 20 | |
| 1720 | CB | 11 | 1 | 21 | |
| 1721 | A | 12 | 12 | 22 | Example In <i>if</i> year 1701 the Domin- ecal Letter is E. I would know <i>if</i> day of <i>if</i> Month the first Tuesday in May is, therefor ^t turn to May and you will find Sunday to be <i>if</i> Fourth day and <i>if</i> first Tuesday to be the 6 th day. |
| 1722 | G | 13 | 23 | 23 | |
| 1723 | F | 14 | 4 | 24 | |
| 1724 | ED | 15 | 15 | 25 | |
| 1725 | C | 16 | 26 | 26 | |
| 1726 | B | 17 | 7 | 27 | |
| 1727 | A | 18 | 18 | 28 | |
| 1728 | GF | 19 | 29 | 1 | |
| 1729 | E | 1 | 11 | 2 | |

A plain & ready Table to finde Easter day for
ever by the Golden Number, & Sunday Letter..

| G. N | A | B | C | D | E | F | G |
|-------|---------|---------|---------|---------|---------|---------|---------|
| I | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 6 | Apr. 7 | Apr. 8 |
| II | Mar. 26 | Mar. 27 | Mar. 28 | Mar. 29 | Mar. 30 | Mar. 31 | Apr. 1 |
| III | Apr. 16 | Apr. 17 | Apr. 18 | Apr. 19 | Apr. 20 | Apr. 14 | Apr. 15 |
| IV | Apr. 9 | Apr. 3 | Apr. 4 | Apr. 5 | Apr. 6 | Apr. 7 | Apr. 8 |
| V | Mar. 26 | Mar. 27 | Mar. 28 | Mar. 29 | Mar. 23 | Mar. 24 | Mar. 25 |
| VI | Apr. 16 | Apr. 17 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 15 |
| VII | Apr. 2 | Apr. 3 | Apr. 4 | Apr. 5 | Apr. 6 | Mar. 31 | Apr. 1 |
| VIII | Apr. 23 | Apr. 24 | Apr. 25 | Apr. 19 | Apr. 20 | Apr. 21 | Apr. 22 |
| IX | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 8 |
| X | Apr. 2 | Apr. 3 | Mar. 28 | Mar. 29 | Mar. 30 | Mar. 31 | Apr. 1 |
| XI | Apr. 16 | Apr. 17 | Apr. 18 | Apr. 19 | Apr. 20 | Apr. 21 | Apr. 22 |
| XII | Apr. 9 | Apr. 10 | Apr. 11 | Apr. 5 | Apr. 6 | Apr. 7 | Apr. 8 |
| XIII | Mar. 26 | Mar. 27 | Mar. 28 | Mar. 29 | Mar. 30 | Mar. 31 | Mar. 25 |
| XIV | Apr. 16 | Apr. 17 | Apr. 18 | Apr. 19 | Apr. 13 | Apr. 14 | Apr. 15 |
| XV | Apr. 2 | Apr. 3 | Apr. 4 | Apr. 5 | Apr. 6 | Apr. 7 | Apr. 8 |
| XVI | Mar. 26 | Mar. 27 | Mar. 28 | Mar. 22 | Mar. 23 | Mar. 24 | Mar. 25 |
| XVII | Apr. 16 | Apr. 10 | Apr. 11 | Apr. 12 | Apr. 13 | Apr. 14 | Apr. 15 |
| XVIII | Apr. 2 | Apr. 3 | Apr. 4 | Apr. 5 | Mar. 30 | Mar. 31 | Apr. 1 |
| XIX | Apr. 23 | Apr. 24 | Apr. 18 | Apr. 19 | Apr. 20 | Apr. 21 | Apr. 22 |

Take this for a General rule, $\frac{y}{y}$

The same day 7 weeks { before } Easter is { Shrove Sunday }
after { Whitsunday }

A fortnight before { Shrove Sunday } is { Septuagesima }
{ Whitsunday } is { Rogation Sunday }

And 3 Sunday after { Shrove Sunday } is { Quadragesima }
{ Whitsunday } is { Trinity Sunday }

Also whensoever the Golden Number is 3, 6, 9, 12, 15
or 18 Then the Epact is the same But

The Golden Number 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
Then the Epact is 11 22 14 25 17 28 20 1 23 4 20 7 29

| Anno Domini | Domini Lett: | N ^o G | 1 ^a F | 2 ^a C | The Use of y ^e XXX years Almanack |
|----------------|-----------------|---------------------|---------------------|---------------------|--|
| 1700 | GF | 10 | 20 | 1 | To find y ^e Dominical Letter for y ^e year Required by the anexed Table which will be y ^e Sunday Letter for the year and when it is Leap year then there are two Dominical Let- ters, the first of which serves from y ^e beginning of the year to S ^t Mathias day which is y ^e 27 of February and y ^e other all the Yeare after. |
| 1701 | E | 11 | 1 | 2 | |
| 1702 | D | 12 | 12 | 3 | |
| 1703 | C | 13 | 23 | 4 | |
| 1704 | BA | 14 | 4 | 5 | |
| 1705 | G | 15 | 15 | 6 | |
| 1706 | F | 16 | 26 | 7 | |
| 1707 | E | 17 | 7 | 8 | |
| 1708 | DC | 18 | 18 | 9 | |
| 1709 | B | 19 | 29 | 10 | |
| 1710 | A | 1 | 11 | 11 | To find the day of y ^e Month. First find y ^e Dominical Letter for the year Required which will be y ^e Sunday Let- ter for all that year |
| 1711 | G | 2 | 22 | 12 | |
| 1712 | FE | 3 | 3 | 13 | |
| 1713 | D | 4 | 14 | 14 | |
| 1714 | C | 5 | 25 | 15 | |
| 1715 | B | 6 | 6 | 16 | |
| 1716 | AG | 7 | 17 | 17 | |
| 1717 | F | 8 | 28 | 18 | |
| 1718 | E | 9 | 9 | 19 | |
| 1719 | D | 10 | 20 | 20 | |
| 1720 | CB | 11 | 1 | 21 | Example In y ^e year 1701 the Domin- ecal Letter is E. I would know w ^t day of y ^e Month the first Tuesday in May is, therefor ^t turn to May and you will find Sunday to be y ^e Fourth day and y ^e first Tuesday to be the 6 th day. |
| 1721 | A | 12 | 12 | 22 | |
| 1722 | G | 13 | 23 | 23 | |
| 1723 | F | 14 | 4 | 24 | |
| 1724 | ED | 15 | 15 | 25 | |
| 1725 | C | 16 | 26 | 26 | |
| 1726 | B | 17 | 7 | 27 | |
| 1727 | A | 18 | 18 | 28 | |
| 1728 | GF | 19 | 29 | 1 | |
| 1729 | E | 1 | 11 | 2 | |



Observations out of y^e Roman Almanack

January

The first day of y^e month is new years day & if in y^e morning y^e fowles be so there will be much anger war and great tempests that year.

If y^e Sun shine on the 22 it is a sign of plenty of wine y^e year

If y^e Sun shine on St. Pauls day the 25 it will be a fruitfull year, if it snow there will be neither much plenty nor scarcity, If it be very moist it betokenes great dearth if it thunder it betokenes dearth



January XXXI days

| Week days | Dom. Letter | Remarkable days | Suns place | Suns rising | Suns setting | Fortune Account |
|--------------|----------------|--------------------|---------------|----------------|-----------------|--------------------|
| 1 | A | New years day | D. M. | H. M. | H. M. | 11 D |
| 2 | B | | 22. 46 | 08. 08 | 03. 51 | 12 E |
| 3 | C | | 23. 47 | 08. 07 | 03. 53 | 13 F |
| 4 | D | | 24. 48 | 08. 06 | 03. 54 | 14 G |
| 5 | E | Telephori | 25. 50 | 08. 04 | 03. 55 | 15 A |
| 6 | F | Epiphany (P. M.) | 26. 51 | 08. 02 | 03. 56 | 16 B |
| 7 | G | | 27. 52 | 08. 01 | 03. 58 | 17 C |
| 8 | A | | 28. 53 | 08. 00 | 04. 00 | 18 D |
| 9 | B | | 28. 54 | 07. 58 | 04. 01 | 19 E |
| 10 | C | | 28. 55 | 07. 56 | 04. 03 | 20 F |
| 11 | D | Hygini P. M. | 1. 57 | 07. 55 | 04. 05 | 21 G |
| 12 | E | | 2. 58 | 07. 54 | 04. 06 | 22 A |
| 13 | F | Hillary B. C. | 3. 59 | 07. 52 | 04. 08 | 23 B |
| 14 | G | Pauli pri. even | 5. 0 | 07. 51 | 04. 09 | 24 C |
| 15 | A | Marcellus P. M. | 6. 1 | 07. 50 | 04. 10 | 25 D |
| 16 | B | Antoni Abb. | 7. 2 | 07. 48 | 04. 12 | 26 E |
| 17 | C | Cathedra S. Pet. | 8. 3 | 07. 40 | 04. 14 | 27 F |
| 18 | D | Mary, Martha. | 9. 4 | 07. 41 | 04. 16 | 28 G |
| 19 | E | Abun. S. Seb. | 10. 5 | 07. 43 | 04. 17 | 29 A |
| 20 | F | | 11. 6 | 07. 41 | 04. 19 | 30 B |
| 21 | G | Agnetis V. M. | 12. 7 | 07. 39 | 04. 21 | 31 C |
| 22 | A | Vincent | 13. 8 | 07. 37 | 04. 23 | 1 D |
| 23 | B | Term begin | 14. 9 | 07. 35 | 04. 24 | 2 E |
| 24 | C | Timothi | 15. 9 | 07. 34 | 04. 26 | 3 F |
| 25 | D | Conver. Paul | 16. 10 | 07. 32 | 04. 28 | 4 G |
| 26 | E | | 17. 11 | 07. 30 | 04. 30 | 5 A |
| 27 | F | | 18. 12 | 07. 28 | 04. 32 | 6 B |
| 28 | G | | 19. 13 | 07. 26 | 04. 34 | 7 C |
| 29 | A | | 20. 13 | 07. 24 | 04. 36 | 8 D |
| 30 | B | K. Charles M. | 21. 14 | 07. 22 | 04. 38 | 9 E |
| 31 | C | | 22. 15 | 07. 20 | 04. 40 | 10 F |

February XXVIII days

| Week days | Dom Letter | Remarkable days | Suns place | Suns rising | Suns setting | Terminy Account |
|--------------|---------------|------------------------|---------------|----------------|-----------------|--------------------|
| 1 | D | Fast BV Purif. Mary | D. M | H. M | H. M | 11 G |
| 2 | E | | 23. 15 | 07. 19 | 04. 41 | 12 A |
| 3 | F | | 24. 16 | 07. 17 | 04. 43 | 13 B |
| 4 | G | | 25. 17 | 07. 15 | 04. 45 | 14 C |
| 5 | A | | 26. 18 | 07. 13 | 04. 47 | 15 D |
| 6 | B | | 27. 18 | 07. 11 | 04. 49 | 16 E |
| 7 | C | | 28. 18 | 07. 09 | 04. 51 | 17 F |
| 8 | D | Term ends | 29. 19 | 07. 07 | 04. 53 | 18 G |
| 9 | E | | 30. 19 | 07. 05 | 04. 55 | 19 A |
| 10 | F | | 1. 19 | 07. 03 | 04. 57 | 20 B |
| 11 | G | | 2. 20 | 07. 01 | 04. 59 | 21 C |
| 12 | A | | 3. 20 | 06. 59 | 05. 01 | 22 D |
| 13 | B | | 4. 20 | 06. 57 | 05. 03 | 23 E |
| 14 | C | | 5. 21 | 06. 54 | 05. 06 | 24 F |
| 15 | D | Valentine | 6. 21 | 06. 52 | 05. 08 | 25 G |
| 16 | E | | 7. 21 | 06. 50 | 05. 10 | 26 A |
| 17 | F | | 8. 21 | 06. 48 | 05. 12 | 27 B |
| 18 | G | | 9. 21 | 06. 46 | 05. 14 | 28 C |
| 19 | A | | 10. 22 | 06. 44 | 05. 16 | 29 D |
| 20 | B | | 11. 22 | 06. 42 | 05. 18 | 30 E |
| 21 | C | | 12. 22 | 06. 40 | 05. 20 | 01 F |
| 22 | D | Fast Martin Apost | 13. 22 | 06. 38 | 05. 22 | 02 G |
| 23 | E | | 14. 22 | 06. 36 | 05. 24 | 03 A |
| 24 | F | | 15. 22 | 06. 34 | 05. 26 | 04 B |
| 25 | G | | 16. 22 | 06. 32 | 05. 28 | 05 C |
| 26 | A | | 17. 21 | 06. 30 | 05. 30 | 06 D |
| 27 | B | | 18. 21 | 06. 28 | 05. 32 | 07 E |
| 28 | C | | 19. 21 | 06. 27 | 05. 33 | 08 F |
| | | | 20. 21 | 06. 25 | 05. 30 | 09 F |

Obferue that when it is Leap (which is every 4th) year
Then February hath 29 days And S^r Mathias day
Falls to be upon the 25 day

March xxxi dayes

| Week dayes | Dom Letter | Remarkable dayes | Suns place | Suns rising | Suns setting | Forreins Account |
|---------------|---------------|---------------------|---------------|----------------|-----------------|---------------------|
| 1 | D | David | D M | H M | H M | 11 |
| 2 | E | Chad | 21. 21 | 06. 20 | 05. 40 | 12 |
| 3 | F | | 22. 20 | 06. 18 | 05. 42 | 13 |
| 4 | G | | 23. 30 | 06. 16 | 05. 44 | 14 |
| 5 | A | | 24. 19 | 06. 14 | 05. 46 | 15 |
| 6 | B | | 25. 19 | 06. 12 | 05. 49 | 16 |
| 7 | C | | 26. 18 | 06. 08 | 05. 51 | 17 |
| 8 | D | | 27. 18 | 06. 06 | 05. 54 | 18 |
| 9 | E | | 28. 18 | 06. 04 | 05. 56 | 19 |
| 10 | F | | 29. 17 | 06. 02 | 05. 58 | 20 |
| 11 | G | | 30. 16 | 06. 00 | 06. 00 | 21 |
| 12 | A | | 1. 16 | 05. 58 | 06. 02 | 22 |
| 13 | B | | 2. 15 | 05. 50 | 06. 04 | 23 |
| 14 | C | | 3. 14 | 05. 54 | 06. 06 | 24 |
| 15 | D | | 4. 14 | 05. 52 | 06. 08 | 25 |
| 16 | E | | 5. 13 | 05. 50 | 06. 10 | 26 |
| 17 | F | | 6. 12 | 05. 48 | 06. 12 | 27 |
| 18 | G | | 7. 11 | 05. 40 | 06. 14 | 28 |
| 19 | A | Joseph confes | 8. 10 | 05. 44 | 06. 16 | 29 |
| 20 | B | | 9. 09 | 05. 42 | 06. 18 | 30 |
| 21 | C | | 10. 08 | 05. 40 | 06. 20 | 31 |
| 22 | D | Paulinus | 11. 07 | 05. 38 | 06. 22 | 1 |
| 23 | E | | 12. 06 | 05. 30 | 06. 24 | 2 |
| 24 | F | | 13. 05 | 05. 52 | 06. 26 | 3 |
| 25 | G | Annu: Mary | 14. 04 | 05. 52 | 06. 28 | 4 |
| 26 | A | | 15. 03 | 05. 30 | 06. 30 | 5 |
| 27 | B | | 16. 02 | 05. 28 | 06. 32 | 6 |
| 28 | C | | 17. 01 | 05. 26 | 06. 34 | 7 |
| 29 | D | | 18. 00 | 05. 24 | 06. 36 | 8 |
| 30 | E | | 18. 08 | 05. 22 | 06. 38 | 9 |
| 31 | F | | 19. 07 | 05. 20 | 06. 40 | 10 |
| | | | 20. 05 | 05. 18 | 06. 42 | |

April XXX dayes

| Week dayes | Letter | Remarkable dayes | Suns place | Suns rising | Suns setting | Foreign Account | | |
|---------------|--------|---------------------|---------------|----------------|-----------------|--------------------|-------|---|
| 1 | G | St Francis of Paula | 21 | 54 05 | 16 06 | 44 | 11 | C |
| 2 | A | | 22 | 53 05 | 14 06 | 46 | 12 | D |
| 3 | B | | 23 | 52 05 | 12 06 | 48 | 13 | E |
| 4 | C | | 24 | 50 05 | 10 06 | 50 | 14 | F |
| 5 | D | | 25 | 48 05 | 8 06 | 52 | 15 | G |
| 6 | E | | 26 | 47 05 | 6 06 | 54 | 16 | A |
| 7 | F | | 27 | 45 05 | 5 06 | 55 | 17 | B |
| 8 | G | | 28 | 42 05 | 3 06 | 57 | 18 | C |
| 9 | A | | 29 | 42 05 | 2 06 | 58 | 19 | D |
| 10 | B | St George | 30 | 40 05 | 0 07 | 0 | 20 | E |
| 11 | C | | 1 | 38 04 | 57 07 | 3 | 21 | F |
| 12 | D | | 2 | 37 04 | 55 07 | 5 | 22 | G |
| 13 | E | | 3 | 35 04 | 53 07 | 7 | 23 | A |
| 14 | F | | 4 | 33 04 | 51 07 | 9 | 24 | B |
| 15 | G | | 5 | 31 04 | 49 07 | 11 | 25 | C |
| 16 | A | | 6 | 29 04 | 47 07 | 13 | 26 | D |
| 17 | B | | 7 | 27 04 | 45 07 | 15 | 27 | E |
| 18 | C | | 8 | 25 04 | 43 07 | 17 | 28 | F |
| 19 | D | | 9 | 23 04 | 41 07 | 19 | 29 | G |
| 20 | E | St Mark Evang | 10 | 21 04 | 39 07 | 21 | 30 | A |
| 21 | F | | 11 | 19 04 | 38 07 | 22 | 1 May | B |
| 22 | G | | 12 | 17 04 | 36 07 | 24 | 2 | C |
| 23 | A | | 13 | 15 04 | 34 07 | 26 | 3 | D |
| 24 | B | | 14 | 13 04 | 32 07 | 28 | 4 | E |
| 25 | C | | 15 | 11 04 | 30 07 | 30 | 5 | F |
| 26 | D | | 16 | 9 04 | 28 07 | 32 | 6 | G |
| 27 | E | | 17 | 7 04 | 27 07 | 33 | 7 | A |
| 28 | F | | 18 | 5 04 | 25 07 | 35 | 8 | B |
| 29 | G | | 16 | 4 04 | 23 07 | 37 | 9 | C |
| 30 | A | 20 | 0 04 | 21 07 | 39 | 10 | D | |

May XXXI dayes

| Week dayes | Dom. Letter | Remarkable dayes | Suns place | Suns rising | Suns setting | Errata Account | |
|---------------|----------------|-------------------------------|---------------|----------------|-----------------|-------------------|---|
| 1 | B | st Phill: & Jacob. | 20 | M 58 04 | M 19 07 42 | 11 | E |
| 2 | C | | 21 | M 56 04 | M 17 07 43 | 12 | F |
| 3 | D | Plague in Lion 1665 | 22 | M 53 04 | M 15 07 45 | 13 | G |
| 4 | E | | 23 | M 51 04 | M 14 07 46 | 14 | A |
| 5 | F | | 24 | M 48 04 | M 12 07 48 | 15 | B |
| 6 | G | | 25 | M 46 04 | M 11 07 49 | 16 | C |
| 7 | A | | 26 | M 44 04 | M 10 07 50 | 17 | D |
| 8 | B | | 27 | M 41 04 | M 8 07 52 | 18 | E |
| 9 | C | | 28 | M 39 04 | M 7 07 53 | 19 | F |
| 10 | D | | 29 | M 36 04 | M 6 07 54 | 20 | G |
| 11 | E | | Π | M 34 04 | M 4 07 56 | 21 | A |
| 12 | F | | 1 | M 31 04 | M 3 07 57 | 22 | B |
| 13 | G | | 2 | M 29 04 | M 2 07 58 | 23 | C |
| 14 | A | | 3 | M 26 04 | M 0 08 0 | 24 | D |
| 15 | B | | 4 | M 21 03 | M 59 08 1 | 25 | E |
| 16 | C | | 5 | M 21 03 | M 58 08 2 | 26 | F |
| 17 | D | | 6 | M 18 03 | M 57 08 3 | 27 | G |
| 18 | E | | 7 | M 16 03 | M 56 08 4 | 28 | A |
| 19 | F | | 8 | M 12 03 | M 55 08 5 | 29 | B |
| 20 | G | | 9 | M 10 03 | M 53 08 7 | 30 | C |
| 21 | A | St Andrew Here | 10 | M 8 03 | M 52 08 8 | 31 | D |
| 22 | B | | 11 | M 5 03 | M 51 08 9 | Jun 1 | E |
| 23 | C | | 12 | M 2 03 | M 50 08 10 | 2 | F |
| 24 | D | | 13 | M 0 03 | M 49 08 11 | 3 | G |
| 25 | E | | 14 | M 57 03 | M 48 08 12 | 4 | A |
| 26 | F | | 15 | M 54 03 | M 47 08 13 | 5 | B |
| 27 | G | | 16 | M 51 03 | M 46 08 14 | 6 | C |
| 28 | A | | 17 | M 49 03 | M 45 08 15 | 7 | D |
| 29 | B | K. Char. 2. Nat. | 18 | M 46 03 | M 44 08 16 | 8 | E |
| 30 | C | | 19 | M 43 03 | M 44 08 17 | 9 | F |
| 31 | D | | 20 | M 40 03 | M 43 08 18 | 10 | G |

June x x x dayes

| Week dayes | Day Letter | Remarkable dayes | Suns place | Suns rising | Suns setting | For Account | | | |
|---------------|---------------|---------------------|---------------|----------------|-----------------|----------------|------|------|---|
| 1 | E | | D 20 | M 37 | H 3 | M 42 | 8 18 | 11 | A |
| 2 | F | | 21 | 34 | 3 | 47 | 8 18 | 12 | B |
| 3 | G | | 22 | 32 | 3 | 42 | 8 18 | 13 | C |
| 4 | A | | 23 | 29 | 3 | 41 | 8 19 | 14 | D |
| 5 | B | | 24 | 26 | 3 | 41 | 8 19 | 15 | E |
| 6 | C | | 25 | 23 | 3 | 41 | 8 19 | 16 | F |
| 7 | D | | 26 | 20 | 3 | 41 | 8 19 | 17 | G |
| 8 | E | | 27 | 17 | 3 | 41 | 8 19 | 18 | A |
| 9 | F | | 28 | 15 | 3 | 41 | 8 19 | 19 | B |
| 10 | G | | 29 | 12 | 3 | 41 | 8 19 | 20 | C |
| 11 | A | St Barnab. | 69 | 0 | 3 | 41 | 8 19 | 21 | D |
| 12 | B | | 1 | 6 | 3 | 41 | 8 19 | 22 | E |
| 13 | C | | 2 | 3 | 3 | 41 | 8 19 | 23 | F |
| 14 | D | St Basil & Constant | 3 | 0 | 3 | 41 | 8 19 | 24 | G |
| 15 | E | | 4 | 57 | 3 | 41 | 8 19 | 25 | A |
| 16 | F | | 5 | 55 | 3 | 41 | 8 19 | 26 | B |
| 17 | G | | 6 | 51 | 3 | 41 | 8 19 | 27 | C |
| 18 | A | | 7 | 48 | 3 | 41 | 8 19 | 28 | D |
| 19 | B | | 8 | 46 | 3 | 42 | 8 18 | 29 | E |
| 20 | C | | 9 | 43 | 3 | 42 | 8 18 | 30 | F |
| 21 | D | | 10 | 40 | 3 | 42 | 8 18 | July | G |
| 22 | E | | 11 | 37 | 3 | 43 | 8 17 | 2 | A |
| 23 | F | | 12 | 34 | 3 | 44 | 8 16 | 3 | B |
| 24 | G | St Iohn Bapt | 13 | 31 | 3 | 44 | 8 16 | 4 | C |
| 25 | A | | 14 | 28 | 3 | 45 | 8 15 | 5 | D |
| 26 | B | | 15 | 25 | 3 | 46 | 8 14 | 6 | E |
| 27 | C | | 16 | 22 | 3 | 47 | 8 13 | 7 | F |
| 28 | D | | 17 | 20 | 3 | 48 | 8 12 | 8 | C |
| 29 | E | St Peter Apol | 18 | 17 | 3 | 49 | 8 11 | 9 | D |
| 30 | F | St Commons Paul | 18 | 14 | 3 | 50 | 8 10 | 10 | E |

July XXXI dayes

| Week dayes | Dom Letter | Remarkable dayes | Suns place | Suns rising | Suns setting | Foraine Account |
|---------------|---------------|---------------------|---------------|----------------|-----------------|--------------------|
| 1 | G | | D 19 | M 11 | H 03 | 51 08 9 |
| 2 | A | Visit. of our Lady | 20 | 8 | 03 | 51 08 12 |
| 3 | B | | 21 | 5 | 03 | 52 08 13 |
| 4 | C | | 22 | 2 | 03 | 53 08 14 |
| 5 | D | | 23 | 0 | 03 | 54 08 15 |
| 6 | E | | 23 | 57 | 03 | 56 08 16 |
| 7 | F | | 24 | 54 | 03 | 57 08 17 |
| 8 | G | | 25 | 51 | 03 | 58 08 18 |
| 9 | A | | 26 | 48 | 03 | 59 08 19 |
| 10 | B | | 27 | 46 | 04 | 0 08 20 |
| 11 | C | | 28 | 43 | 04 | 2 07 21 |
| 12 | D | | 29 | 40 | 04 | 3 07 22 |
| 13 | E | | 30 | 37 | 04 | 4 07 23 |
| 14 | F | | 1 | 35 | 04 | 6 07 24 |
| 15 | G | St Swithuns | 2 | 32 | 04 | 7 07 25 |
| 16 | A | | 3 | 30 | 04 | 8 07 26 |
| 17 | B | | 4 | 27 | 04 | 10 07 27 |
| 18 | C | | 5 | 24 | 04 | 11 07 28 |
| 19 | D | Dogg dayes beg | 6 | 21 | 04 | 12 07 29 |
| 20 | E | | 7 | 19 | 04 | 14 07 30 |
| 21 | F | | 8 | 16 | 04 | 15 07 31 |
| 22 | G | | 9 | 13 | 04 | 17 07 32 |
| 23 | A | | 10 | 11 | 04 | 18 07 33 |
| 24 | B | | 11 | 8 | 04 | 20 07 34 |
| 25 | C | St James Apost | 12 | 0 | 04 | 22 07 35 |
| 26 | D | St Anne | 13 | 3 | 04 | 23 07 36 |
| 27 | E | | 14 | 1 | 04 | 25 07 37 |
| 28 | F | | 15 | 8 | 04 | 27 07 38 |
| 29 | G | | 16 | 6 | 04 | 28 07 39 |
| 30 | A | | 17 | 3 | 04 | 30 07 40 |
| 31 | B | | 17 | 1 | 04 | 32 07 41 |



Augult xxxi dayes

| Week dayes | Dom Letter | Remarkable dayes | Suns place | Suns rising | Suns setting | Foraine accompt |
|---------------|---------------|---------------------|---------------|----------------|-----------------|--------------------|
| | | | D M | H M | H M | |
| 1 | C | Lammas | 18 18 | 04 35 | 07 26 | 11 F |
| 2 | D | Stephen Mart | 19 16 | 04 36 | 07 21 | 12 G |
| 3 | E | Dominus | 20 11 | 04 38 | 07 22 | 13 A |
| 4 | F | | 21 11 | 04 40 | 07 20 | 14 B |
| 5 | G | | 22 10 | 04 41 | 07 19 | 15 C |
| 6 | A | | 23 10 | 04 43 | 07 17 | 16 D |
| 7 | B | | 24 10 | 04 45 | 07 15 | 17 E |
| 8 | C | | 25 10 | 04 47 | 07 13 | 18 F |
| 9 | D | | 26 10 | 04 48 | 07 12 | 19 G |
| 10 | E | | 27 10 | 04 50 | 07 10 | 20 A |
| 11 | F | | 28 10 | 04 52 | 07 8 | 21 B |
| 12 | G | | 29 10 | 04 54 | 07 6 | 22 C |
| 13 | A | | 30 10 | 04 56 | 07 4 | 23 D |
| 14 | B | | 31 10 | 04 58 | 07 2 | 24 E |
| 15 | C | | 1 19 | 04 58 | 07 0 | 25 F |
| 16 | D | | 2 17 | 05 0 | 07 0 | 26 G |
| 17 | E | | 3 15 | 05 2 | 06 58 | 27 A |
| 18 | F | | 4 13 | 05 4 | 06 56 | 28 B |
| 19 | G | | 5 11 | 05 6 | 06 54 | 29 C |
| 20 | A | | 6 9 | 05 8 | 06 52 | 30 D |
| 21 | B | | 7 8 | 05 10 | 06 50 | 31 E |
| 22 | C | | 8 6 | 05 12 | 06 48 | 1 F |
| 23 | D | | 9 4 | 05 14 | 06 46 | 2 G |
| 24 | E | | 10 2 | 05 16 | 06 44 | 3 A |
| 25 | F | Barth Apostle | 11 0 | 05 18 | 06 42 | 4 B |
| 26 | G | | 12 11 | 05 20 | 06 40 | 5 C |
| 27 | A | Dogg dayes end | 13 12 | 05 22 | 06 38 | 6 D |
| 28 | B | | 14 13 | 05 24 | 06 36 | 7 E |
| 29 | C | | 15 14 | 05 26 | 06 34 | 8 F |
| 30 | D | | 16 15 | 05 28 | 06 32 | 9 G |
| 31 | E | | 17 16 | 05 30 | 06 30 | 10 A |

Septemb xxx dayes.

| Week dayes | Dom Letter | Remarkable dayes | Suns place | Suns rising | Suns setting | Forrain Account |
|---------------|---------------|---------------------|------------------------|----------------|-----------------|--------------------|
| | | | D M H M H M | | | |
| 1 | F | Lond burnt 1556 | 18 47 05 35 06 25 | 11 | B | |
| 2 | G | | 19 16 05 37 06 23 | 12 | C | |
| 3 | A | | 20 34 05 39 06 21 | 13 | D | |
| 4 | B | | 21 43 05 31 06 19 | 14 | E | |
| 5 | C | | 22 41 05 43 06 17 | 15 | F | |
| 6 | D | | 23 40 05 45 06 15 | 16 | G | |
| 7 | E | Sturb: Faire | 24 39 05 47 06 13 | 17 | A | |
| 8 | F | | 25 37 05 49 06 11 | 18 | B | |
| 9 | G | | 26 70 05 51 06 9 | 19 | C | |
| 10 | A | | 27 35 05 53 06 7 | 20 | D | |
| 11 | B | | 28 34 05 56 06 4 | 21 | E | |
| 12 | C | | 29 33 05 58 06 2 | 22 | F | |
| 13 | D | Holy Croſe | <u>30</u> 31 06 0 06 0 | 23 | G | |
| 14 | E | | 1 30 06 2 05 58 | 24 | A | |
| 15 | F | | 2 29 06 4 05 56 | 25 | B | |
| 16 | G | | 3 18 06 6 05 54 | 26 | C | |
| 17 | A | | 4 27 06 9 05 51 | 27 | D | |
| 18 | B | | 5 26 06 11 05 49 | 28 | E | |
| 19 | C | S Mathew Apoſt | 6 25 06 13 05 47 | 29 | F | |
| 20 | D | | 7 25 06 15 05 45 | 30 | G | |
| 21 | E | | 8 24 06 17 05 43 | Oct | A | |
| 22 | F | | 9 23 06 19 05 41 | 1 | B | |
| 23 | G | | 10 22 06 21 05 39 | 2 | C | |
| 24 | A | | 11 22 06 23 05 37 | 3 | D | |
| 25 | B | S Michael | 12 21 06 25 05 35 | 4 | E | |
| 26 | C | | 13 20 06 27 05 33 | 5 | F | |
| 27 | D | | 14 20 06 29 05 31 | 6 | G | |
| 28 | E | | 15 19 06 31 05 29 | 7 | A | |
| 29 | F | | 16 19 06 33 05 27 | 8 | B | |
| 30 | G | | 17 18 06 35 05 25 | 9 | C | |

Octob. xxxi days

| Week Days | Dom Letter | Remarkable days | Suns place | Suns rising | Suns setting | Termine Account |
|--------------|---------------|--------------------|-------------------|----------------|-----------------|--------------------|
| | | | D M H M H M | | | |
| 1 | A | | 18 18 06 38 05 22 | 11 | D | |
| 2 | B | | 19 17 06 40 05 20 | 12 | E | |
| 3 | C | | 20 17 06 42 05 18 | 13 | F | |
| 4 | D | | 21 16 06 44 05 16 | 14 | G | |
| 5 | E | | 22 16 06 46 05 14 | 15 | A | |
| 6 | F | | 23 16 06 48 05 12 | 16 | B | |
| 7 | G | | 24 16 06 50 05 10 | 17 | C | |
| 8 | A | | 25 15 06 52 05 8 | 18 | D | |
| 9 | B | | 26 15 06 54 05 6 | 19 | E | |
| 10 | C | | 27 15 06 56 05 4 | 20 | F | |
| 11 | D | | 28 15 06 58 05 2 | 21 | G | |
| 12 | E | | 29 15 07 0 05 0 | 22 | A | |
| 13 | F | | M. 15 07 2 04 58 | 23 | B | |
| 14 | G | | 1 15 07 4 04 56 | 24 | C | |
| 15 | A | | 2 15 07 6 04 54 | 25 | D | |
| 16 | B | | 3 15 07 8 04 52 | 26 | E | |
| 17 | C | | 4 15 07 10 04 50 | 27 | F | |
| 18 | D | Luke Evang | 5 15 07 12 04 48 | 28 | G | |
| 19 | E | | 6 15 07 14 04 46 | 29 | A | |
| 20 | F | | 7 16 07 16 04 44 | 30 | B | |
| 21 | G | | 8 16 07 18 04 42 | 31 | C | |
| 22 | A | | 9 16 07 20 04 40 | Nov | D | |
| 23 | B | Termie beg: | 10 16 07 22 04 38 | 2 | E | |
| 24 | C | | 11 17 07 23 04 37 | 3 | F | |
| 25 | D | | 12 17 07 25 04 35 | 4 | G | |
| 26 | E | | 13 18 07 27 04 33 | 5 | A | |
| 27 | F | | 14 18 07 29 04 31 | 6 | B | |
| 28 | G | St Simon & Jude | 15 19 07 31 04 29 | 7 | C | |
| 29 | A | | 16 19 07 33 04 27 | 8 | D | |
| 30 | B | | 17 19 07 34 04 26 | 9 | E | |
| 31 | C | | 18 20 07 36 04 24 | 10 | F | |

Novemb xxx dayes

| Week | Dayes | Dom | Letter | Remarkable dayes | Suns place | Suns rising | Suns setting | Errours Account | |
|------|-------|-----|--------|------------------|------------|-------------|--------------|-----------------|---|
| | | | | | D M | H M | II M | | |
| 1 | D | | | All Saints | 19 21 | 07 38 | 04 22 | 11 | G |
| 2 | E | | | All Souls | 20 21 | 07 39 | 04 21 | 12 | A |
| 3 | F | | | | 21 22 | 07 41 | 04 19 | 13 | B |
| 4 | G | | | | 22 23 | 07 42 | 04 18 | 14 | C |
| 5 | A | | | Papists Conspi | 23 23 | 07 44 | 04 16 | 15 | D |
| 6 | B | | | | 24 24 | 07 46 | 04 14 | 16 | E |
| 7 | C | | | | 25 25 | 07 47 | 04 13 | 17 | F |
| 8 | D | | | | 26 26 | 07 49 | 04 11 | 18 | G |
| 9 | E | | | | 27 26 | 07 51 | 04 9 | 19 | A |
| 10 | F | | | | 28 27 | 07 52 | 04 8 | 20 | B |
| 11 | G | | | | 29 28 | 07 53 | 04 6 | 21 | C |
| 12 | A | | | | ✓ 29 | 07 55 | 04 5 | 22 | D |
| 13 | B | | | | 1 30 | 07 57 | 04 3 | 23 | E |
| 14 | C | | | | 2 31 | 07 58 | 04 2 | 24 | F |
| 15 | D | | | | 3 32 | 08 0 | 04 0 | 25 | G |
| 16 | E | | | | 4 33 | 08 1 | 03 59 | 26 | A |
| 17 | F | | | | 5 34 | 08 3 | 03 57 | 27 | B |
| 18 | G | | | | 6 35 | 08 4 | 03 56 | 28 | C |
| 19 | A | | | | 7 36 | 08 5 | 03 55 | 29 | D |
| 20 | B | | | | 8 37 | 08 7 | 03 53 | 30 | E |
| 21 | C | | | | 9 38 | 08 8 | 03 52 | ✓ 1 | F |
| 22 | D | | | | 10 39 | 08 9 | 03 51 | 2 | G |
| 23 | E | | | | 11 40 | 08 10 | 03 50 | 3 | A |
| 24 | F | | | | 12 41 | 08 11 | 03 48 | 4 | B |
| 25 | G | | | | 13 42 | 08 12 | 03 48 | 5 | C |
| 26 | A | | | appeared in Lon | 14 43 | 08 12 | 03 48 | 6 | D |
| 27 | B | | | a Comet 1664 | 15 45 | 08 13 | 03 47 | 7 | E |
| 28 | C | | | Term ends | 16 46 | 08 14 | 03 46 | 8 | F |
| 29 | D | | | | 17 47 | 08 14 | 03 46 | 9 | G |
| 30 | E | | | Andrew Apost. | 18 48 | 08 15 | 03 45 | 10 | A |

Decemb xxxi dayes

| Week dayes | Dom Letter | Remarkable dayes | Suns place | | | Suns rising | | | Suns setting | | | Lunar Account | |
|---------------|---------------|---------------------|---------------|----|---|----------------|---|----|-----------------|---|---|------------------|---|
| | | | D | M | H | M | H | M | M | H | M | | |
| 1 | F | | 19 | 09 | 8 | 16 | 3 | 44 | 11 | | | B | |
| 2 | G | | 20 | 51 | 8 | 16 | 3 | 44 | 12 | | | C | D |
| 3 | A | | 21 | 52 | 8 | 17 | 3 | 43 | 13 | | | D | E |
| 4 | B | | 22 | 53 | 8 | 17 | 3 | 43 | 14 | | | E | F |
| 5 | C | | 23 | 54 | 8 | 18 | 3 | 42 | 15 | | | F | G |
| 6 | D | | 24 | 56 | 8 | 18 | 3 | 42 | 16 | | | G | |
| 7 | E | BY | 25 | 57 | 8 | 18 | 3 | 42 | 17 | | | A | |
| 8 | F | Concep: Mary | 26 | 58 | 8 | 19 | 3 | 41 | 18 | | | B | |
| 9 | G | | 28 | 0 | 8 | 19 | 3 | 41 | 19 | | | C | D |
| 10 | A | | 29 | 1 | 8 | 19 | 3 | 41 | 20 | | | D | E |
| 11 | B | Shortest day | 30 | 2 | 8 | 19 | 3 | 41 | 21 | | | E | F |
| 12 | C | | 1 | 3 | 8 | 19 | 3 | 41 | 22 | | | F | G |
| 13 | D | | 2 | 5 | 8 | 19 | 3 | 41 | 23 | | | G | |
| 14 | E | | 3 | 6 | 8 | 19 | 3 | 41 | 24 | | | A | B |
| 15 | F | | 4 | 7 | 8 | 19 | 3 | 41 | 25 | | | B | C |
| 16 | G | | 5 | 9 | 8 | 18 | 3 | 42 | 26 | | | C | D |
| 17 | A | | 6 | 10 | 8 | 18 | 3 | 42 | 27 | | | D | E |
| 18 | B | | 7 | 11 | 8 | 18 | 3 | 42 | 28 | | | E | F |
| 19 | C | | 8 | 13 | 8 | 17 | 3 | 43 | 29 | | | F | G |
| 20 | D | | 9 | 14 | 8 | 17 | 3 | 43 | 30 | | | G | |
| 21 | E | Tho: Apost | 10 | 15 | 8 | 16 | 3 | 44 | 31 | | | A | |
| 22 | F | | 11 | 17 | 8 | 16 | 3 | 44 | 32 | | | B | C |
| 23 | G | | 12 | 18 | 8 | 15 | 3 | 45 | 3 | | | C | D |
| 24 | A | | 13 | 19 | 8 | 14 | 3 | 46 | 4 | | | D | E |
| 25 | B | Christmas day | 14 | 21 | 8 | 14 | 3 | 46 | 5 | | | E | F |
| 26 | C | Stephen | 15 | 22 | 8 | 13 | 3 | 47 | 6 | | | F | G |
| 27 | D | Iohn Evang | 16 | 23 | 8 | 12 | 3 | 48 | 7 | | | G | |
| 28 | E | Innocents day | 17 | 25 | 8 | 12 | 3 | 48 | 8 | | | A | B |
| 29 | F | | 18 | 26 | 8 | 11 | 3 | 49 | 9 | | | B | C |
| 30 | G | | 19 | 27 | 8 | 10 | 3 | 50 | 10 | | | C | D |
| 31 | A | | 20 | 28 | 8 | 9 | 3 | 51 | | | | D | |



Kings of England before the Conquest

Kings of England since the Conquest

| An. Mu. | | THE NORMAN LINE | |
|-----------------------|------|-------------------------------|------|
| Brute | 1830 | William the Conq ^r | 1066 |
| Memprick | 1894 | William Rufus | 1087 |
| Bladud | 5100 | Henry I | 1100 |
| | | Stephen | 1135 |
| | | SAXON LINE RESTORED | |
| Dunwallo | 3522 | Henry II | 1155 |
| Belinus | 3562 | Richard I | 1189 |
| Lud | 3801 | John | 1199 |
| Calibellane | 3895 | Henry III | 1216 |
| | | Edward I | 1273 |
| | | Edward II | 1307 |
| | | Edward III | 1316 |
| | | Richard II | 1377 |
| | | LINE OF LANCASTER | |
| Arviragus | 45 | Henry III | 1399 |
| Lucius | 180 | Henry V | 1412 |
| Constantine | 310 | Henry VI | 1422 |
| Constantine | 340 | LINE OF YORKE | |
| Vortiger | 448 | Edward IV | 1460 |
| Aurelius | 482 | Edward V | 1483 |
| Arthur | 517 | Richard III | 1483 |
| | | Union of the two Families | |
| Egbert | 800 | Henry VII | 1485 |
| Ethelwolf | 837 | Henry VIII | 1509 |
| Alfred | 872 | Edward VI | 1547 |
| Canutus | 1018 | Queen Mary | 1553 |
| | | Queen Elizabeth | 1558 |
| | | Union of the two Kingdoms | |
| Edw Conf ^s | 1042 | James I | 1603 |
| Harold | 1066 | Charles I | 1625 |
| | | Charles II | 1649 |
| | | James II & Mary II | 1685 |



The Rule of a ladder being knowne how far y^e foot
 thereof is distant ~~from~~ from y^e bottom of any
 wall against which it standeth being also knowne
 to finde the height of y^e wall y^e ladder reacheth
Example

There is a ladder AB ^{the} 35 foot long
 it is set against a wall so that y^e foot of y^e
 ladder at B is removed from y^e bottom of y^e wall
 at C 21 foot I would knowe what height of y^e
 wall y^e ladder reacheth (that is) what is y^e height of
 AC + First multiply 35 by y^e length of y^e ladder
 by 25 y^e product is 1225 Also multi 21 (y^e distance
 from C to B) by y^e product is 441 which being
 subtracted from y^e former 1225 there remaine
 784 y^e square root whereof being extracted
 is 28 & so high doth y^e ladder reach upon wall A





A Table for buying or selling any thing
by y Hundred, counting as to y
Hundred.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----|----|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 11 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| 12 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 13 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| 14 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 |
| 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 16 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| 17 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| 18 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| 19 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| 20 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

The Use of this Table may appear in this
following Example—

If one pound Cost 2 pence 3 farthings, what will the hundred cost. Look in y first
Column for 2 pence 3 farthings, y peace under d and y far under q in right
against it in the second Column you will find 2 pounds, 2 shillings, and 4
pence, and see much will 112 pound Cost—

**A Table for \dot{y} Purchases at $\text{gl } 6\text{l}$
8 l and 10 l Per Cent.
Compound interest,**

| | | at 5 pr Cent | at 6 pr Cent | at 8 pr Cent | at 10 pr Cent | The Use of the Table |
|--|-----|--------------------------|--------------------------|--------------------------|---------------------------|---|
| | Y | MY | MY | MY | MY | |
| | 1 | 0 | 11.0 | 11.0 | 11.0 | 10 Look in the first Column |
| | 2 | 1 | 10.1 | 10.1 | 9.1 | 9 for 51 years, and right |
| | 3 | 2 | 9.2 | 8.2 | 7.2 | 6 against it under 5 per |
| | 4 | 3 | 8.3 | 6.3 | 4.3 | 2 Cent, you shall find 18. 3. |
| | 5 | 4 | 7.4 | 5.4 | 0.3 | 0 Which shews the Lease is |
| | 6 | 5 | 6.5 | 4.5 | 7.4 | 4 worth 18 years purchase |
| | 7 | 5 | 5.6 | 3.6 | 2.4 | 11 and 3 months which is a |
| | 8 | 6 | 4.6 | 2.6 | 1.5 | 4 quarter of a year. |
| | 9 | 7 | 3.6 | 1.6 | 0.5 | 9 So that if the Rent were |
| | 10 | 7 | 2.6 | 0.6 | 0.6 | 2 1/2 a year then it times 10 |
| | 11 | 8 | 1.7 | 0.7 | 0.6 | 6 is 180 and the quarter |
| | 12 | 9 | 0.8 | 0.7 | 0.6 | 1 of the year is 216 in |
| | 13 | 10 | 0.5 | 0.8 | 0.7 | 7 all 18 & 10: and so much |
| | 14 | 11 | 0.4 | 0.9 | 0.8 | 0 is the Lease worth in |
| | 15 | 12 | 0.3 | 0.9 | 0.8 | 4 ready Money at 5 |
| | 16 | 13 | 0.2 | 1.0 | 0.8 | 11 per cent. — But if |
| | 17 | 14 | 0.1 | 1.0 | 0.9 | 1 the purchaser would |
| | 18 | 15 | 0.1 | 1.1 | 0.9 | 2 have 6 l 8 l or 10 l |
| | 19 | 16 | 0.1 | 1.1 | 1.0 | 3 profit for his |
| | 20 | 17 | 0.1 | 1.2 | 1.0 | 4 Money then |
| | 21 | 18 | 0.1 | 1.2 | 1.1 | 6 profit for his 3 y |
| | 22 | 19 | 0.1 | 1.2 | 1.1 | 9 Money the 15-0 |
| | 23 | 20 | 0.1 | 1.3 | 1.2 | 8 Lease is 12-0 |
| | 24 | 21 | 0.1 | 1.3 | 1.2 | 10 worth 9-0 |
| | 25 | 22 | 0.1 | 1.4 | 1.3 | 0 |
| | 26 | 23 | 0.1 | 1.4 | 1.3 | 0 |
| | 27 | 24 | 0.1 | 1.5 | 1.4 | 0 |
| | 28 | 25 | 0.1 | 1.5 | 1.4 | 0 |
| | 29 | 26 | 0.1 | 1.6 | 1.5 | 0 |
| | 30 | 27 | 0.1 | 1.6 | 1.5 | 0 |
| | 31 | 28 | 0.1 | 1.7 | 1.6 | 0 |
| | 32 | 29 | 0.1 | 1.7 | 1.6 | 0 |
| | 33 | 30 | 0.1 | 1.8 | 1.7 | 0 |
| | 34 | 31 | 0.1 | 1.8 | 1.7 | 0 |
| | 35 | 32 | 0.1 | 1.9 | 1.8 | 0 |
| | 36 | 33 | 0.1 | 1.9 | 1.8 | 0 |
| | 37 | 34 | 0.1 | 2.0 | 1.9 | 0 |
| | 38 | 35 | 0.1 | 2.0 | 1.9 | 0 |
| | 39 | 36 | 0.1 | 2.1 | 2.0 | 0 |
| | 40 | 37 | 0.1 | 2.1 | 2.0 | 0 |
| | 41 | 38 | 0.1 | 2.2 | 2.1 | 0 |
| | 42 | 39 | 0.1 | 2.2 | 2.1 | 0 |
| | 43 | 40 | 0.1 | 2.3 | 2.2 | 0 |
| | 44 | 41 | 0.1 | 2.3 | 2.2 | 0 |
| | 45 | 42 | 0.1 | 2.4 | 2.3 | 0 |
| | 46 | 43 | 0.1 | 2.4 | 2.3 | 0 |
| | 47 | 44 | 0.1 | 2.5 | 2.4 | 0 |
| | 48 | 45 | 0.1 | 2.5 | 2.4 | 0 |
| | 49 | 46 | 0.1 | 2.6 | 2.5 | 0 |
| | 50 | 47 | 0.1 | 2.6 | 2.5 | 0 |
| | 51 | 48 | 0.1 | 2.7 | 2.6 | 0 |
| | 52 | 49 | 0.1 | 2.7 | 2.6 | 0 |
| | 53 | 50 | 0.1 | 2.8 | 2.7 | 0 |
| | 54 | 51 | 0.1 | 2.8 | 2.7 | 0 |
| | 55 | 52 | 0.1 | 2.9 | 2.8 | 0 |
| | 56 | 53 | 0.1 | 2.9 | 2.8 | 0 |
| | 57 | 54 | 0.1 | 3.0 | 2.9 | 0 |
| | 58 | 55 | 0.1 | 3.0 | 2.9 | 0 |
| | 59 | 56 | 0.1 | 3.1 | 3.0 | 0 |
| | 60 | 57 | 0.1 | 3.1 | 3.0 | 0 |
| | 61 | 58 | 0.1 | 3.2 | 3.1 | 0 |
| | 62 | 59 | 0.1 | 3.2 | 3.1 | 0 |
| | 63 | 60 | 0.1 | 3.3 | 3.2 | 0 |
| | 64 | 61 | 0.1 | 3.3 | 3.2 | 0 |
| | 65 | 62 | 0.1 | 3.4 | 3.3 | 0 |
| | 66 | 63 | 0.1 | 3.4 | 3.3 | 0 |
| | 67 | 64 | 0.1 | 3.5 | 3.4 | 0 |
| | 68 | 65 | 0.1 | 3.5 | 3.4 | 0 |
| | 69 | 66 | 0.1 | 3.6 | 3.5 | 0 |
| | 70 | 67 | 0.1 | 3.6 | 3.5 | 0 |
| | 71 | 68 | 0.1 | 3.7 | 3.6 | 0 |
| | 72 | 69 | 0.1 | 3.7 | 3.6 | 0 |
| | 73 | 70 | 0.1 | 3.8 | 3.7 | 0 |
| | 74 | 71 | 0.1 | 3.8 | 3.7 | 0 |
| | 75 | 72 | 0.1 | 3.9 | 3.8 | 0 |
| | 76 | 73 | 0.1 | 3.9 | 3.8 | 0 |
| | 77 | 74 | 0.1 | 4.0 | 3.9 | 0 |
| | 78 | 75 | 0.1 | 4.0 | 3.9 | 0 |
| | 79 | 76 | 0.1 | 4.1 | 4.0 | 0 |
| | 80 | 77 | 0.1 | 4.1 | 4.0 | 0 |
| | 81 | 78 | 0.1 | 4.2 | 4.1 | 0 |
| | 82 | 79 | 0.1 | 4.2 | 4.1 | 0 |
| | 83 | 80 | 0.1 | 4.3 | 4.2 | 0 |
| | 84 | 81 | 0.1 | 4.3 | 4.2 | 0 |
| | 85 | 82 | 0.1 | 4.4 | 4.3 | 0 |
| | 86 | 83 | 0.1 | 4.4 | 4.3 | 0 |
| | 87 | 84 | 0.1 | 4.5 | 4.4 | 0 |
| | 88 | 85 | 0.1 | 4.5 | 4.4 | 0 |
| | 89 | 86 | 0.1 | 4.6 | 4.5 | 0 |
| | 90 | 87 | 0.1 | 4.6 | 4.5 | 0 |
| | 91 | 88 | 0.1 | 4.7 | 4.6 | 0 |
| | 92 | 89 | 0.1 | 4.7 | 4.6 | 0 |
| | 93 | 90 | 0.1 | 4.8 | 4.7 | 0 |
| | 94 | 91 | 0.1 | 4.8 | 4.7 | 0 |
| | 95 | 92 | 0.1 | 4.9 | 4.8 | 0 |
| | 96 | 93 | 0.1 | 4.9 | 4.8 | 0 |
| | 97 | 94 | 0.1 | 5.0 | 4.9 | 0 |
| | 98 | 95 | 0.1 | 5.0 | 4.9 | 0 |
| | 99 | 96 | 0.1 | 5.1 | 5.0 | 0 |
| | 100 | 97 | 0.1 | 5.1 | 5.0 | 0 |

For

The use of the Tables

The first Table Shewing the decrease of one Pound Yearly at 6 per cent. may be used in buying Reversions, &c. As suppose a parcel of Land or house or $\frac{1}{2}$ like, whose fee simple or real worth is 200^l. and it be Mortgaged or Leased out for 20 Years, then what is the Reversion thereof after that 20 Years, worth in ready Money, for answer, I look against 20 Years and find that the Reversion of 1 pound after 20 Years is worth but 6^l. 2^s. 3^d. then if 1^l be worth 6^l. 2^s. 3^d. 200^l. will be 200. times as much, which will be 6^l. 5^s. 10^d. for the Value of the reversion required.

The Second Table may be used in buying of lease &c. as Suppose I am to buy a Lease of 10. per annum, for 21 Years, what ready money may I give at the rate of 6^l. per cent. per annum. for answer, I look against 21 Years and find that 1 annuity to continue 21 Years is worth in ready Money 11^l. 5^s. 3^d. 1^d. then I say if 1 annuity for 21 Years be worth 10 times as much, which will be 117^l. 12^s. 8^d. 2^d. for the Value of the Lease required.

The third Table may be used in putting out Money for a time at 6^l. per cent. per annum. as Suppose 20^l. be let out for 7 Years what will it amount to in that time reckoning Interest upon Interest: for answer I look against 7 Years and find that 1^l. will amount to in that time 1^l. 10^s. 0^d. 3^d. then I say 20^l. will amount to 20 times as much which will be 30^l. 1^l. 3^d.

A Table of Annuities and Reversions

| | What 1 Pound will pay any Number of Years hence under 11 is Worth in ready money. | | | | What 1 pound Annuity to Conti- nue any time under 11 Years is worth in ready mo- ney at 6 per cent | | | | What 1 pound will amount to at any time under 11 Years reckon- Interest upon Inte- | | | |
|----|---|----|----|----|---|----|----|----|--|----|----|----|
| | lb. | s. | d. | q. | lb. | s. | d. | q. | lb. | s. | d. | q. |
| 1 | 18 | 10 | 2 | | 0 | 18 | 10 | 2 | 1 | 1 | 2 | 2 |
| 2 | 17 | 9 | 2 | | 1 | 16 | 8 | 0 | 1 | 2 | 5 | 2 |
| 3 | 16 | 9 | 2 | | 2 | 13 | 5 | 2 | 1 | 3 | 9 | 3 |
| 4 | 15 | 10 | 0 | | 3 | 9 | 3 | 2 | 1 | 5 | 3 | 0 |
| 5 | 14 | 11 | 1 | | 4 | 4 | 3 | 0 | 1 | 8 | 9 | 0 |
| 6 | 14 | 1 | 1 | | 5 | 18 | 4 | 1 | 1 | 8 | 4 | 2 |
| 7 | 13 | 3 | 2 | | 6 | 11 | 7 | 3 | 1 | 10 | 0 | 3 |
| 8 | 12 | 6 | 2 | | 7 | 4 | 2 | 1 | 1 | 11 | 10 | 2 |
| 9 | 11 | 10 | 0 | | 8 | 16 | 0 | 1 | 1 | 13 | 9 | 2 |
| 10 | 11 | 2 | 0 | | 9 | 7 | 2 | 1 | 1 | 15 | 9 | 3 |
| 11 | 10 | 6 | 2 | | 10 | 17 | 8 | 3 | 1 | 17 | 11 | 2 |
| 12 | 9 | 11 | 1 | | 11 | 7 | 8 | 0 | 2 | 0 | 3 | 0 |
| 13 | 9 | 4 | 2 | | 12 | 17 | 0 | 2 | 2 | 2 | 7 | 3 |
| 14 | 8 | 10 | 0 | | 13 | 5 | 10 | 3 | 2 | 5 | 2 | 2 |
| 15 | 8 | 4 | 0 | | 14 | 14 | 3 | 0 | 2 | 7 | 11 | 1 |
| 16 | 7 | 10 | 2 | | 15 | 2 | 1 | 2 | 2 | 10 | 9 | 2 |
| 17 | 7 | 5 | 0 | | 16 | 9 | 6 | 2 | 2 | 13 | 10 | 2 |
| 18 | 7 | 0 | 0 | | 17 | 16 | 6 | 2 | 3 | 17 | 1 | 0 |
| 19 | 6 | 7 | 1 | | 18 | 3 | 2 | 0 | 3 | 0 | 6 | 0 |
| 20 | 6 | 2 | 3 | | 19 | 9 | 4 | 3 | 3 | 4 | 1 | 3 |
| 21 | 5 | 10 | 2 | | 20 | 15 | 3 | 1 | 3 | 7 | 11 | 3 |
| 22 | 5 | 6 | 2 | | 21 | 0 | 10 | 0 | | | | |
| 23 | 5 | 2 | 3 | | 22 | 6 | 0 | 3 | <p>By this Table you may readily find the Increase of any other Summ for Such a number of Years: for if 1. come to 50 much then such Suppose 5^l will come to 5 times as much.</p> | | | |
| 24 | 4 | 11 | 1 | | 23 | 11 | 0 | 0 | | | | |
| 25 | 4 | 7 | 2 | | 24 | 15 | 8 | 0 | | | | |
| 26 | 4 | 4 | 3 | | 25 | 0 | 0 | 3 | | | | |
| 27 | 4 | 1 | 3 | | 26 | 4 | 2 | 2 | | | | |
| 28 | 3 | 11 | 0 | | 27 | 8 | 1 | 3 | | | | |
| 29 | 3 | 9 | 1 | | 28 | 11 | 9 | 2 | | | | |
| 30 | 3 | 5 | 3 | | 29 | 15 | 3 | 2 | | | | |



(9)

Υ \varnothing Π ζ α ϖ \simeq m \nearrow \vee \simeq \times
Mar. Apr. Ma. Jun. Jul. Aug. Sep. Oct. Nov. Dec. Jan. Feb.
 9. 9. 10. 10. 12. 12. 12. 12. 11. 10. 9. 8.

For the Degree of the Sun's Place on any Day:

From the day of the Month on which the Sun's Place is required, if you can, or otherwise from the sum of that and 30, subtract the day of his entrance into the Sign of that Month, the remainder shall be the Degree of his Place, in that or the next preceding Sign.

Example.

Suppose on the 6th day of March 1701. I would know in what Degree of the Signs the Sun is in: Therefore according to the Rule, put 30 to it, then it is 36; from which if you take 9, the day of the Sun's entrance into that Month, there remains 27, which shews the Sun is in 27 Degrees in the Sign preceding, which is *Aries*.

To find the Age of the Moon, or the day of her Change.

Jan. 0, 1, 2, 3, 4, 5, 6,
 8, 8, 10, 10. *these to the Epact fix.*
The (Sum) bare 30 to the Month day add,
Or take from 30, Age or Change is had.

Which is thus Explained.

Add to the Epact,

Jan. Feb. Mar. Apr. Ma. Jun. Jul. Aug. Sep. Oct. Nov. Dec.
 0. 2. 1. 2. 3. 4. 5. 6. 8. 8. 10. 10.

When the Epact is added to any of these Numbers, the sum, if it be less than 30, or the Excess above 30,

B

added

added to the day of the given Month (rejecting 30 if need be) gives the Age of the Moon that day; but subtracted from 30, leaves the day of her Change in, (or from the beginning of) that Month.

For the day of the Full Moon, add or subtract 15 to or from the day of the Change gives the Full Moon.

Example.

(1.) *For the Moons Age May the 29th 1701.*

To the day of the Month add 3, being the Number for May, and the Epact 1, which makes 33, from which take 30, the remainder is 3, the Age of the Moon required.

(2.) *For the day of the Change (or New Moon)*

In May 1701, the Epact is 1, which with 3 (for the Month) makes 4, which subtract from 30, the residue is 26, the day of the New Moon for that Month.

(3.) *For the day of the Full Moon (in the said Month of May.)*

To find the Hour of the Moons coming to South and High Water at London.

The Moons Age multiply by 4, divide

By 5 for southing; add 3 for the Tide.

Example.

Ann 1701, May the 29th, the Age of the Moon being 3 days, which multiply by 4, makes 12, which divide by 5, the Quotient is 2, and there will remain 2, which shews that the Moon comes to the South at 2 of the Clock and 24 minutes past (for the 2 that remains, are so many 12 minutes) to which if you add 3 (for the time of the flowing at London) it makes 5 of the Clock and 24 minutes past, the time of High-Water at London that day.

Note



*A plain and easie Table Shewing the true interest
due upon any sum of money from five shillings to
an Hundred pounds for a Year or under
after the Rate of six Pounds
in the Hundred*

| | | 1 Mon | 3 Mon | 6 Mon | 9 Mon | 1 year |
|----------------|-----|---------|---------|---------|---------|---------|
| | | sh p q | sh p q | sh p q | sh p q | sh p q |
| Shill. | 5 | 0.0.1 | 0.0.3 | 0.1.3 | 0.2.2 | 0.3.2 |
| | 10 | 0.0.2 | 0.1.3 | 0.3.2 | 0.5.2 | 0.7.0 |
| | 15 | 0.0.3 | 0.2.2 | 0.5.1 | 0.8.0 | 0.10.2 |
| Pounds | 1 | 0.1.0 | 0.3.2 | 0.7.0 | 0.10.2 | 1.2.1 |
| | 2 | 0.2.1 | 0.7.0 | 1.2.1 | 1.9.1 | 2.4.2 |
| | 3 | 0.3.2 | 0.10.2 | 1.9.1 | 2.7.3 | 3.6.3 |
| | 4 | 0.4.3 | 1.2.1 | 2.4.2 | 3.6.3 | 4.9.0 |
| | 5 | 0.6.0 | 1.6.0 | 3.0.0 | 4.6.6 | 6.0.0 |
| | 6 | 0.7.0 | 1.9.2 | 3.7.0 | 5.4.2 | 7.2.1 |
| | 7 | 0.8.1 | 2.1.0 | 4.2.1 | 6.3.1 | 8.4.2 |
| | 8 | 0.9.2 | 2.4.2 | 4.9.1 | 7.1.3 | 9.6.3 |
| | 9 | 0.10.3 | 2.8.1 | 5.4.2 | 8.0.3 | 10.9.0 |
| | | po.sh.p | po.sh.p | po.sh.p | po.sh.p | po.sh.p |
| Tens of pounds | 10 | 0.1.0 | 0.3.0 | 0.6.0 | 0.9.0 | 0.12.0 |
| | 20 | 0.2.0 | 0.6.0 | 0.12.0 | 0.18.0 | 1.4.0 |
| | 30 | 0.3.0 | 0.9.0 | 0.18.0 | 1.7.0 | 1.16.0 |
| | 40 | 0.4.0 | 0.12.0 | 1.4.0 | 1.16.0 | 2.8.0 |
| | 50 | 0.5.0 | 0.15.0 | 1.10.0 | 2.5.0 | 3.0.0 |
| | 60 | 0.6.0 | 0.18.0 | 1.16.0 | 3.14.0 | 3.12.0 |
| | 70 | 0.7.0 | 1.1.0 | 2.2.0 | 3.3.0 | 4.4.0 |
| | 80 | 0.8.0 | 1.4.0 | 2.8.0 | 3.12.0 | 4.16.0 |
| | 90 | 0.9.0 | 1.7.0 | 3.14.0 | 4.1.0 | 5.8.0 |
| | 100 | 0.10.0 | 1.10.0 | 3.0.0 | 4.10.0 | 6.0.0 |

A Table of the New Moons

| Mon | 1701 | 1702 | 1703 | 1704 | 1705 | 1706 | 1707 | 1708 | 1709 | 1710 | 1711 | 1712 | 1713 | 1714 | 1715 |
|-----|------|------|------|------|------|--------------------|------|------|--------------------|------|------|------|------|------|------|
| Ian | 28 | 17 | 6 | 25 | 14 | 3 | 22 | 11 | 30 | 18 | 7 | 26 | 15 | 4 | 23 |
| Feb | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 10 | 29 | 17 | 6 | 25 | 14 | 3 | 22 |
| Mar | 28 | 17 | 6 | 25 | 14 | 3 | 22 | 11 | ¹ 30 | 18 | 7 | 26 | 15 | 4 | 23 |
| Apr | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 10 | 29 | 17 | 6 | 25 | 14 | 3 | 22 |
| May | 26 | 15 | 4 | 23 | 12 | ¹ 30 | 20 | 9 | 28 | 16 | 5 | 24 | 13 | 2 | 21 |
| Jun | 25 | 14 | 3 | 22 | 11 | 30 | 19 | 8 | 27 | 15 | 4 | 23 | 12 | 1 | 19 |
| Jul | 24 | 13 | 2 | 21 | 10 | 29 | 18 | 7 | 26 | 14 | 3 | 22 | 11 | 30 | 19 |
| Aug | 23 | 12 | 1 | 20 | 9 | 28 | 17 | 6 | 25 | 13 | 2 | 21 | 10 | 29 | 18 |
| Sep | 21 | 10 | 29 | 18 | 7 | 26 | 15 | 4 | 23 | 11 | 30 | 19 | 8 | 27 | 16 |
| Oct | 21 | 10 | 29 | 18 | 7 | 26 | 15 | 4 | 23 | 11 | 30 | 19 | 8 | 27 | 16 |
| Nov | 19 | 8 | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 9 | 28 | 17 | 6 | 25 | 14 |
| Dec | 19 | 8 | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 9 | 28 | 17 | 6 | 25 | 14 |

for XXX years from *y* year 1701.

| Möin | 1716 | 1717 | 1718 | 1719 | 1720 | 1721 | 1722 | 1723 | 1724 | 1725 | 1726 | 1727 | 1728 | 1729 | 1730 |
|------|------|--------------------|------|--------------------|------|------|------|------|------|--------------------|------|------|------|------|------|
| Jan | 12 | ¹ 31 | 20 | 9 | 28 | 17 | 6 | 25 | 14 | 3 | 22 | 11 | 30 | 18 | 7 |
| Feb | 11 | 0 | 19 | 8 | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 10 | 29 | 17 | 6 |
| Mar | 12 | ¹ 31 | 20 | 9 | 28 | 17 | 6 | 25 | 14 | 3 | 22 | 11 | 30 | 18 | 7 |
| Apr | 11 | ¹ 30 | 19 | 8 | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 10 | 29 | 17 | 6 |
| May | 10 | 29 | 18 | 7 | 26 | 15 | 4 | 23 | 12 | ¹ 30 | 20 | 9 | 28 | 16 | 5 |
| Jun | 9 | 28 | 17 | 6 | 25 | 14 | 3 | 22 | 11 | 30 | 19 | 8 | 27 | 15 | 4 |
| Jul | 8 | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 10 | 29 | 18 | 7 | 26 | 14 | 3 |
| Aug | 7 | 26 | 15 | 4 | 23 | 12 | 1 | 20 | 9 | 28 | 17 | 6 | 25 | 13 | 2 |
| Sep | 5 | 24 | 13 | 2 | 21 | 10 | 29 | 18 | 7 | 26 | 15 | 4 | 23 | 11 | 30 |
| Oct | 5 | 24 | 13 | 2 | 21 | 10 | 29 | 18 | 7 | 26 | 15 | 4 | 23 | 11 | 30 |
| Nov | 3 | 22 | 11 | ¹ 30 | 19 | 8 | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 9 | 28 |
| Dec | 3 | 22 | 11 | ¹ 30 | 19 | 8 | 27 | 16 | 5 | 24 | 13 | 2 | 21 | 9 | 28 |



Note that when the Age of the *Moon* exceeds 15 days, you must reject 15.

To find the Hour of the Night by the shadow of the Moon upon a Sun-Dial.

First find her coming to South, as before; then see how many hours and minutes the shadow wants of the hour of 12, which hours and minutes take from the hours and minutes of the Moons coming to South, the remainder is the hour of the Night; but if the shadow be past the hour of 12, then you must add so many hours and minutes as the shadow is past 12, to the hour and minutes of the Moons coming to South, and that will be the hour of the Night.

The Use of the Tide-Table.

The use of this Table, is to find the time of High Water at all those places, express'd at the top of the Table, the Moons Age being first known, as before directed, then find the same in the left hand Column, and under the place required, you will find the time of High-Water.

The Use of the Table of Interest.

Suppose I would know the Interest 115 *l.* comes to for 9 months (at 6 per Cent. for which the Table is made) first look for 100 *l.* which I find at the bottom of the Table in the first Column; and under the Title of 9 months I find 4 *l.* 10 *s.* 0 *d.* the next I look 15 *l.* but not finding it in the Table, I take it out at twice, first 10 *l.* and then 5 *l.* against 10 *l.* for 9 months I find 9 *s.* and against 5 *l.* under 9 months I find 4 *s.* 6 *d.* which being added together. makes 5 *l.* 3 *s.* 6 *d.* which is the Interest for 115 *l.* for 9 months.

B 2

The

The Use of the Table of New Moons.

On the left side of the Table you have each month in the year; and on the head of the Table you have the years of our Lord, and in the common Angle of meeting you have the time of New Moon for that year; the use of which Table will be made manifest by the following Example.

I would know the time of New Moon for *May* 1700, then look at the head of the Table for the Date of the year, and on the left hand for the month of *May*, and in the common Angle of meeting, you will find that it is New Moon the 7th day, as was required.

The Use of the Circular Table, marked at the Corner with Figure 1.

This Table sheweth the Dominical Letter, Cycle of the *Sun*, Epact, and Golden Number for 56 years from the year 1676.

For finding the Dominical Letter, and Cycle of the *Sun*, you are first to seek the year of our Lord in the two outermost Circles; you have the Dominical Letter, and the Number of the *Sun's* Cycle.

For Example.

If you would know, in the year 1700, and 1728, what the Dominical Letter and Cycle of the *Sun* is, you will find the Dominical Letters to be G F, which denotes it to be Leap-year, and the Cycle of the *Sun* to be 1; and if you would find the Epact, and Golden Number for any year contained in the Table, then find the years required in the fifth and sixth Circles, and in the innermost you'll have your desire; As for the years 1681, and 1700, you will find the Epact to be 2, and the Golden Number to be 10. *The*



A Perpetual Almanack

For findeing the day of the Month for ever. For time Past, Present, And to come . By *John Seller.*

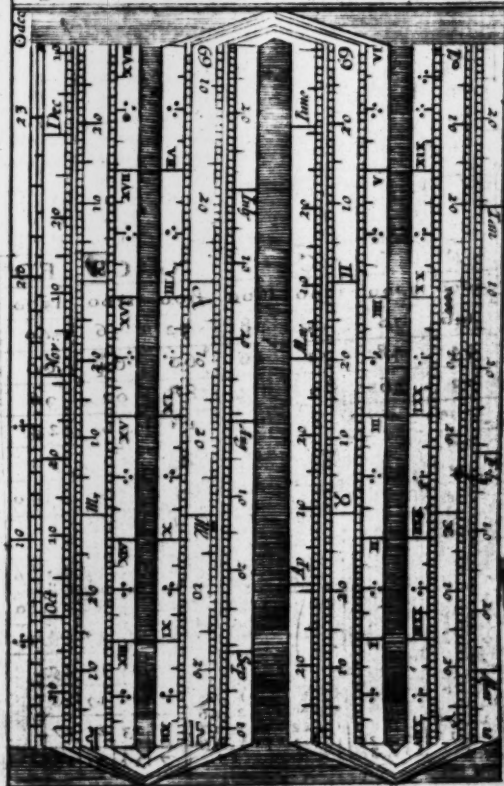
| <i>Januar</i> | <i>February</i> | <i>March</i> | <i>April</i> | <i>May</i> | <i>June</i> |
|---------------|------------------|----------------|----------------|---------------|----------------|
| <i>At</i> | <i>Dover</i> | <i>Dwells</i> | <i>George</i> | <i>Browne</i> | <i>Esquire</i> |
| <i>Good</i> | <i>Christoph</i> | <i>Finch</i> | <i>And</i> | <i>David</i> | <i>Fryer</i> |
| <i>Iuly</i> | <i>August</i> | <i>Septem.</i> | <i>October</i> | <i>Novem.</i> | <i>Decemb.</i> |

To find the Dom: Letter for ever

| | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| C ₁ | E ₁ | G ₁ | B ₁ | D ₁ | F ₁ | A ₁ |
| B ₂ | D ₂ | F ₂ | A ₂ | C ₂ | E ₂ | G ₂ |
| A ₃ | C ₃ | E ₃ | G ₃ | B ₃ | D ₃ | F ₃ |
| GF | BA | DC | FE | AG | CB | ED |
| 1000 | 1200 | 1400 | 1600 | 1100 | 1300 | 1500 |
| 1616 | 20 | 24 | 28 | 32 | 36 | 40 |
| 44 | 48 | 52 | 56 | 60 | 64 | 68 |
| 72 | 76 | 80 | 84 | 88 | 92 | 96 |
| 1200 | 4 | 8 | 12 | 16 | 20 | 24 |
| 28 | 32 | 36 | 40 | 44 | 48 | 52 |
| 2400 | 1900 | 2100 | 2300 | 1800 | 2000 | 2200 |

| <i>High water at 12: noon</i> | <i>Moons age</i> | <i>The Moons souching.</i> | <i>Moons age for her bin</i> | <i>To find the day of the Month</i> | | | | |
|-----------------------------------|------------------|--------------------------------|----------------------------------|---|----|----|----|----|
| 3 — 46 | 1 — 10 | 0 — 48 | 1 — 29 | 1 | 8 | 15 | 22 | 29 |
| 4 — 56 | 2 — 17 | 1 — 36 | 2 — 28 | | | | | |
| 5 — 24 | 3 — 18 | 2 — 24 | 3 — 27 | | | | | |
| 6 — 12 | 4 — 19 | 3 — 12 | 4 — 20 | | | | | |
| 7 — 0 | 5 — 20 | 4 — 00 | 5 — 25 | 2 | 9 | 16 | 23 | 30 |
| 7 — 40 | 6 — 21 | 4 — 48 | 6 — 24 | | | | | |
| 8 — 36 | 7 — 22 | 5 — 36 | 7 — 23 | 3 | 10 | 17 | 24 | 31 |
| 9 — 24 | 8 — 23 | 6 — 24 | 8 — 22 | | | | | |
| 10 — 12 | 9 — 24 | 7 — 12 | 9 — 21 | 4 | 11 | 18 | 25 | |
| 11 — 0 | 10 — 25 | 8 — 00 | 10 — 20 | | | | | |
| 11 — 48 | 11 — 26 | 8 — 48 | 11 — 19 | 5 | 12 | 19 | 26 | |
| 12 — 36 | 12 — 27 | 9 — 36 | 12 — 18 | | | | | |
| 1 — 24 | 13 — 28 | 10 — 24 | 13 — 17 | 6 | 13 | 20 | 27 | |
| 2 — 12 | 14 — 29 | 11 — 12 | 14 — 16 | | | | | |
| 3 — 0 | 15 — 30 | 12 — 00 | 15 — 15 | 7 | 14 | 21 | 28 | |

An Almanck Shewing the Day of the Month, Suns Place,
Right Ascension and Declination for ever: By John Seller.





*The Use of the Almanack in Lines, Entituled
(an Almanack shewing the day of the Month,
Suns Place, Right Ascension and Declina-
tion for ever.)*

The Margin on the left side sheweth the Sun's Declination for every day in the year, directing your Eye from any day of the month required.

As for Example.

If it be required to know what Declination the Sun hath on the 25th day of *October*, which day you will find in the second Column, and right against the 25th day you will find the Declination to be 15 degrees 30 min. and you may well determine it to be South Declination, because the Sun is then to the Southward of the Equinoctial, being after the 13th day of *September*, from which time to the 10th of *March* following (the Sun hath all that time) South Declination. And if you would know the Sun's Place for the same day, observe the following Directions.

To find the Sun's Place.

Suppose the Sun's Place were required on the aforesaid day, viz. the 25th day of *October*, direct your Eye from the said day to the next Column on the right hand, and you will find the Sun's Place to be in 12 degrees 39 min. of *Scorpio*. And if you would know the Sun's Right Ascension for that day, in time observe these following Directions.

To find the Sun's Right Ascension in Hours and Minutes.

Suppose it were required to find the Sun's Right Ascension (converted into Hours) for the aforesaid 25th of *October*, which in the fourth Column you will find right against the said day, to be 15 hours.

The

The same way and order is to be observed in all the rest of the months for any of the forementioned requisites.

The Use of the Perpetual Almanack.

This Almanack is contained in this short Disquisition.

*At Dover dwells George Brown, Esquire,
Good Christopher Finch, and David Wrier.*

By which Verse, with the help of the Dominical Letter, you may find the day of the month for any time past, present, or to come; the use of which Tables and Verse are here-under shewed.

*The Use of the Table of the Dominical Letters,
and their Application, for finding the day
of the Month, by the help of the foresaid
Disquisition.*

First observe, That all those Years express in the Tables, are all Leap-Years; as the Years 1000, 1200, 1400, 1600, &c. and so of the rest, which are all Leap-Years, and have each of them two Dominical Letters, as you may see in their respective Columns over their heads; as for the Year 1000, the Dominical Letters were G F, and so of the rest. The other Figures also, as 20, 24, 28, 32, &c. are all Leap Years; the use of which are thus explained.

First, Suppose the Dominical Letter is required for the Year 1632, look for 1600 in one of the Columns, and in another Column for 32; and on the head of the said Column, you will find it is Leap-Year, and the Dominical Letter to be A G.

Secondly,

Secondly, Suppose you would know the *Dominical Letter* for the Year 1681, Look in the Table for 81, which you find not there; therefore look for the Year before, which is 80, and that is *Leap Year*, and the *Dominical Letters* are D C. Now C being the *Dominical Letter* for the latter part of the Year 1680, the next Letter before it, in the Alphabetical order, is B, which is the *Dominical Letter* for the next Year 1681, which Letter you will find on the top of the next Column, where you will find the Letter B, with the figure of 1 by it, which informs you that it is the first after *Leap Year*. And so for the Year 1682, the *Dominical Letter* is A, and the second after *Leap Year*; the same is to be understood of the rest. Thus having found the *Dominical Letter*, the day of the month may be found by the following Directions.

To find the day of the Month by the fore-mentioned Distich, with the help of the Dominical Letters found in the Table.

For the finding the day of the month by that short Verse, you are to take notice, That the first Letter in each word, is the same Week-day Letter that always beginneth the month, as A always beginneth *January*, and so of the rest, as you may see in any Almanack, according to that order as you see in the Distich: All which will be sufficiently explained in this

Example 1.

The first *Sunday* in *June*, in the Year 1700, I would know what day of the month it is for that Year, I find G F to be the *Dominical Letters*, and by the Distich you find the Letter E begins the month of *June*, therefore count on in the natural order of the Alphabet
from

from E till you come to F, the *Sunday Letter*, which sheweth it to be the second day of the month.

Example 2.

I would know what day of the month the second *Thursday* of *July* is in the Year 1700, the *Dominical Letter* is F; I find by the Verse, that *July* begins the month with G, (therefore I say G one, A two, B three, C four, D five, E six, F seven, which is *Sunday*) therefore G is *Monday*, A *Tuesday*, B *Wednesday*, C *Thursday*, D *Friday*, E *Saturday*, F *Sunday*, &c. next C which is the Letter for *Thursday*, and shews that it will be the 11th day of the month on which the second *Thursday* falls on. The month begins with a *Monday*, and casting your Eye down to a small Table on the bottom of the said Almanack, and there you may take notice, that the first row of Figures on the head of the Table, is 1, 8, 15, 22, 29, which is all the same days of the Week that the month begins with, as if the month begins with a *Sunday*, the first row are all *Sundays*, and the second row all *Mondays*, the third row all *Tuesdays*, and so on. As for instance, the month of *July* in the Year 1700, begins on a *Monday*, so then the upper row are all *Mondays*, and the second row all are *Tuesdays*, then *Monday* and *Monday* is 8, and *Monday* is 15, and *Monday* is 22, and *Monday* is 29, &c. After these Rules and Directions, you may always find the day of the month at any time, both past, present, and to come.

Upon the same Print of the *Perpetual Almanack*, you have also some other small Tables; one shewing the time of High-Water at *London-Bridge* any day of the *Moons* Age. Another sheweth the *Moons* coming to South any day of her Age, by help of which you may know the time of High-Water at *London*, or elsewhere; where the time of Floating is known, at the

Full

Full and Change days. The fourth Table sheweth the *Moons* Age for her shining. The use of each Table shall be explained in these following Directions.

By having the Moons Age, to find the time of High-Water at London-Bridge.

The *Moons* Age must be first known from some other Table in the Book, or else-where; which being known, find the day thereof in the fore-mentioned small Table, and right against it, on the left hand, you will find the time of High-Water at *London-Bridge*.

As for Example.

If the *Moon* be six days old, I would know when it is High-Water at *London-Bridge*. Therefore first seek the *Moons* Age 6 in its proper Table, and right against it you will find 7, 48. which shews that it is High-Water at 7 a Clock and 48 minutes past.

To find the Moons Southing any day of her Age.

First you must look the Age of the *Moon* as before, and then seek the same in the Table of her Age, and right against it, in the Table on the right hand, under the Title of the *Moons Southing*, you will have your desire. And here note, That from the New to the Full, the *Moon* cometh to South in the Afternoon; but from the Full to the New, in the Morning.

As for Example.

When the *Moon* is six days old, I would know the time of her coming to South. Therefore if you cast your Eye on the Table of *Moons Southing*, you will find 4, 48. which shews that the *Moon* cometh to South at 4 a Clock and 48 minutes past.

The Use of these Tables for finding the time of the Moons shining.

To know how long the *Moon* shineth, enter the Column of the *Moons* Age for her shining; and against it on the left hand you have the time of her shining; which all the time of her Encrease being added to the hour of *Suns* Rising, gives the time of her Rising; but if added to the time of *Sun's* Setting, gives the time of her Setting; but after the Full, the time of her shining from the *Sun's* Rising, and it gives her Rising; and then take the same from the *Sun's* Setting, and it gives the time of her Setting.

Example.

In the Year 1700, *July* the 29th, the *Moon* is 24 days o'd, which Number find in the Table, and you will find right against it there is 4 hours 48 minutes for the time of her shining, which being added to the *Sun's* rising of the same day, which is 4 hours 48 minutes, make 9 hours 36 minutes, which is the time of the *Moons* Rising.

Again, to the 4 hours 48 minutes, the *Moons* shining, add 7 hours 14 minutes the *Sun's* Setting, and it gives 12 hours 2 minutes for the time of her Setting.

To find the hour of the Night by the shadow of the Moon upon a Sun-Dial, by the help of the Moons Southing.

Observe on a *Sun-Dial* what hour the shadow of the *Moon* falls upon, and take notice how much the shadow doth either lack or is past the hour of 12 upon the Dial, for so much it doth want, or is past the time of the *Moons* coming to South.

Example

A Necessary Table for Menfuration of Superficial Measures,

| Long measure | | | | | | | | | |
|--------------|------------|------------|----------|---------|---------|--------|--------|-------|-------|
| | Inches. | Centefime. | Feet. | Yard. | Pace. | Perch. | Chain. | Acre. | Mile. |
| Inche. | 1 | 7.92 | 12 | 36 | 60 | 198 | 792 | 7920 | 87360 |
| Centefim. | 62.726 | 1 | 1.515 | 4.55 | 7.575 | 24 | 100 | 1000 | 8000 |
| Feet. | 124 | 2.208 | 1 | 3 | 5 | 16.5 | 66 | 660 | 5280 |
| Yard. | 1396 | 20.755 | 9 | 1 | 1.66 | 550 | 22 | 220 | 1760 |
| Pace. | 3000 | 57.481 | 25 | 2.278 | 1 | 4.5 | 13.2 | 132 | 1056 |
| Perch. | 39204 | 624 | 272.25 | 40.25 | 10.89 | 1 | 4 | 40 | 420 |
| Chain. | 627264 | 10000 | 4456 | 484 | 174.24 | 16 | 1 | 10 | 80 |
| Acre. | 6272640 | 100000 | 45560 | 4840 | 1742.4 | 160 | 10 | 1 | 80 |
| Mile. | 6014489600 | 64000000 | 48478400 | 4024600 | 1115145 | 102400 | 6400 | 640 | 1 |
| Square | Inches. | Centefime | Feet. | Yard. | Pace. | Perch. | Chain. | Acre. | Mile |

square measure

| A Table for Corn measure. | | | | | | | | | |
|------------------------------|-------|------|----|------|--------|----------------------|---------------|------|----|
| Pints | Gall: | | | | | | | | |
| 8 | | | | | | | | | |
| 16 | 2 | Peck | | | | | | | |
| 64 | 8 | | 4 | Bush | | | | | |
| 128 | 16 | | 8 | 2 | strike | Car | | | |
| 256 | 32 | | 16 | 4 | 2 | moock or coomb | Sagin ryer | | |
| 512 | 64 | | 32 | 8 | 4 | 2 | or quart | | |
| 3072 | 384 | 102 | 48 | 24 | 12 | 6 | Wey | | |
| 5120 | 640 | 320 | 80 | 40 | 20 | 10 | 12 | 12 | 12 |
| 112 | 81 | 16 | 64 | 128 | 256 | 512 | 3072 | 5120 | |
| 1440 | 71 | 14 | 56 | 1C | 2C | 4C | 24C | 40C | |

The Line T Expresseth Troy weight, and Averd.

| A Table for Wine measure. A Tm of Wine weighing Averd. 17 C Weight, One But 11, 0 $\frac{1}{2}$ Ounces Troy. | | | | | | | | | |
|---|------|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Pints | Gall | | | | | | | | |
| 8 | | | | | | | | | |
| 16 | 2 | Bundl | | | | | | | |
| 32 | 4 | | 1 $\frac{1}{2}$ | Barr | | | | | |
| 64 | 8 | | 3 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ |
| 128 | 16 | | 7 | 3 | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ |
| 256 | 32 | | 14 | 6 | 3 | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ |
| 512 | 64 | | 28 | 12 | 6 | 3 | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ |
| 1024 | 128 | | 56 | 24 | 12 | 6 | 3 | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ |
| 2048 | 256 | | 112 | 48 | 24 | 12 | 6 | 3 | 1 $\frac{1}{2}$ |
| 4096 | 512 | | 224 | 96 | 48 | 24 | 12 | 6 | 3 |

The same for Honey, Oyl, &c

| Troy Weight. | | | | Apoth: Weight. | | | |
|----------------|----------------|--------------|-------------|----------------|-------------|----|---------------|
| <i>Grains.</i> | | | | <i>Gr.</i> | <i>Scr.</i> | | |
| 24 | <i>Pen: wt</i> | | | 60 | 3 | 3 | <i>dr.</i> |
| 480 | 20 | <i>Ounc:</i> | | 480 | 24 | 8 | <i>3 oz</i> |
| 5760 | 240 | 12 | <i>lib:</i> | 5760 | 288 | 96 | 12 <i>itt</i> |

| | | | | | | | |
|------------------|---------------|----------------|---------------|-------------------------------------|-------------|--|--|
| <i>Scruples.</i> | | | | <i>Troy l. to Averd: l. 17. 14.</i> | | | |
| | | | | <i>Troy ounce to Av: 51. 56.</i> | | | |
| | | | | Averd: Weight. | | | |
| 3 | <i>Drams.</i> | | | | | | |
| 24 | 8 | <i>Ounces,</i> | | | | | |
| 384 | 128 | 16 | <i>pound.</i> | | | | |
| 43208 | 14336 | 1792 | 112 | <i>Mund.</i> | | | |
| 860160 | 286720 | 35840 | 2240 | 20 | <i>Tun.</i> | | |

| <i>Pints. A Table for Ale</i> | | | | | | <i>Pints. Beer.</i> | | | | | |
|-------------------------------|--------------|--------------|--------------|--------------|------------|---------------------|--------------|--------------|--------------|--------------|------------|
| 8 | <i>Gall:</i> | | | | | 8 | <i>Gall:</i> | | | | |
| 64 | 8 | <i>Firk:</i> | | | | 64 | 8 | <i>Firk:</i> | | | |
| 128 | 16 | 2 | <i>Kild:</i> | | | 128 | 16 | 2 | <i>Kild:</i> | | |
| 256 | 32 | 4 | 2 | <i>Barr:</i> | | 256 | 32 | 4 | 2 | <i>Barr:</i> | |
| 512 | 64 | 8 | 4 | 2 | <i>Mag</i> | 512 | 64 | 8 | 4 | 2 | <i>Mag</i> |

*A Table of the number of Bricks
in a rod of Walling, at any Feet:
high, from 1 to 20 for 1 and a $\frac{1}{2}$*

| <i>Feet high</i> | <i>at 1 Brick thick</i> | <i>at 1 Brick & $\frac{1}{2}$ thick</i> | <i>The Use of the Table</i> |
|----------------------|-----------------------------|--|--|
| 1 | 176 | 264 | <i>If you would have this Table for $\frac{1}{2}$ a brick, take the half of the Table for one brick, if for 2 brick then double it, if for 2 and a $\frac{1}{2}$ then ad both these together, if for 3 double that for one brick and $\frac{1}{2}$.</i> |
| 2 | 352 | 528 | |
| 3 | 528 | 792 | |
| 4 | 704 | 1056 | |
| 5 | 880 | 1320 | |
| 6 | 1136 | 1704 | |
| 7 | 1232 | 1848 | |
| 8 | 1408 | 2112 | |
| 9 | 1584 | 2376 | |
| 10 | 1760 | 2640 | <i>If you have any number of feet of brick work, at half a brick, 1 brick, or 2 bricks, or more and you would reduce it to one brick and a half, then say by γ line of Numbers, as 1.2.4. 5. or 6. is to three so is γ number of feet, at $\frac{1}{2}$. 2. 2 $\frac{1}{2}$ or 3 bricks to the number of feet at 1 and $\frac{1}{2}$.</i> |
| 11 | 1936 | 2904 | |
| 12 | 2112 | 3168 | |
| 13 | 2288 | 3432 | |
| 14 | 2464 | 3696 | |
| 15 | 2640 | 3960 | |
| 16 | 2816 | 4224 | |
| 16 $\frac{1}{2}$ | 2904 | 4356 | |
| 17 | 2992 | 4488 | |
| 18 | 3168 | 4752 | |
| 19 | 3344 | 5010 | |
| 20 | 3520 | 5280 | |

The Allize for Bread for all WEIGHTS.

Weight of a Penny Loaf
Troy Averd.

Free Towns
Bakers

White Whea. Hou. White Wheat Hou.

Foreigners

| s. | d. | oz. | d. | oz. | d. | oz. | d. | oz. | d. | oz. | d. | s. | d. |
|----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|
| 2. | 0 | 10. | 13 | 25. | 4 | 33. | 11 | 15. | 7 | 23. | 1 | 30. | 15 |
| 2. | 3 | 15. | 7 | 25. | 3 | 30. | 14 | 14. | 2 | 22. | 3 | 28. | 4 |
| 2. | 6 | 14. | 4 | 21. | 6 | 28. | 8 | 13. | 0 | 19. | 10 | 26. | 0 |
| 2. | 9 | 13. | 3 | 19. | 13 | 26. | 7 | 12. | 1 | 18. | 2 | 24. | 3 |
| 3. | 0 | 12. | 5 | 18. | 8 | 24. | 11 | 11. | 5 | 16. | 18 | 22. | 11 |
| 3. | 3 | 11. | 9 | 17. | 6 | 23. | 9 | 10. | 11 | 15. | 17 | 21. | 7 |
| 3. | 6 | 10. | 14 | 16. | 5 | 21. | 13 | 9. | 10 | 14. | 18 | 19. | 18 |
| 3. | 9 | 10. | 5 | 15. | 7 | 20. | 9 | 9. | 8 | 14. | 2 | 18. | 16 |
| 4. | 0 | 9. | 12 | 14. | 10 | 19. | 8 | 8. | 18 | 13. | 7 | 17. | 16 |
| 4. | 3 | 9. | 4 | 12. | 14 | 18. | 8 | 8. | 9 | 12. | 13 | 16. | 18 |
| 4. | 6 | 8. | 13 | 13. | 4 | 17. | 10 | 8. | 1 | 12. | 1 | 16. | 2 |
| 4. | 9 | 8. | 7 | 12. | 10 | 16. | 14 | 7. | 13 | 11. | 10 | 15. | 7 |
| 5. | 0 | 8. | 1 | 12. | 1 | 16. | 2 | 7. | 7 | 11. | 0 | 14. | 14 |
| 5. | 3 | 7. | 11 | 11. | 9 | 15. | 7 | 7. | 1 | 10. | 11 | 14. | 2 |
| 5. | 6 | 7. | 6 | 11. | 2 | 14. | 13 | 6. | 15 | 10. | 3 | 13. | 10 |
| 5. | 9 | 7. | 2 | 10. | 11 | 14. | 4 | 6. | 10 | 9. | 15 | 13. | 0 |
| 6. | 0 | 6. | 14 | 10. | 4 | 13. | 11 | 6. | 5 | 9. | 8 | 12. | 10 |
| 6. | 3 | 6. | 10 | 9. | 15 | 13. | 4 | 6. | 0 | 9. | 1 | 12. | 1 |
| 6. | 6 | 6. | 6 | 9. | 9 | 12. | 12 | 5. | 16 | 8. | 15 | 11. | 13 |
| 6. | 9 | 6. | 3 | 9. | 4 | 12. | 6 | 5. | 12 | 8. | 9 | 11. | 5 |
| 7. | 0 | 5. | 15 | 8. | 15 | 11. | 15 | 5. | 9 | 8. | 2 | 10. | 18 |
| 7. | 3 | 5. | 12 | 8. | 11 | 11. | 9 | 5. | 5 | 7. | 18 | 10. | 11 |
| 7. | 6 | 5. | 9 | 8. | 6 | 11. | 3 | 5. | 2 | 7. | 13 | 10. | 5 |
| 7. | 9 | 5. | 7 | 8. | 3 | 10. | 14 | 4. | 19 | 7. | 9 | 9. | 19 |
| 8. | 0 | 5. | 4 | 7. | 15 | 10. | 9 | 4. | 16 | 7. | 5 | 9. | 12 |
| 8. | 3 | 5. | 12 | 7. | 2 | 10. | 5 | 4. | 14 | 7. | 1 | 9. | 0 |
| 8. | 6 | 5. | 0 | 7. | 8 | 10. | 0 | 4. | 11 | 6. | 13 | 9. | 2 |
| 8. | 9 | 4. | 14 | 7. | 5 | 9. | 12 | 4. | 9 | 6. | 13 | 8. | 18 |
| 9. | 0 | 4. | 12 | 7. | 2 | 9. | 8 | 4. | 6 | 6. | 10 | 8. | 12 |



Example.

Suppose the *Moon* were ten days old, you find (by the Table) that the *Moon* cometh to South at 8 of the Clock. Now suppose the shadow of the *Moon* should fall on the hour of 10, this wants two hours of 12, and also wants two hours of 8, which is 6 of the Clock in the Evening.

But if the shadow of the *Moon* had been at 2 on the Dial, then you must have added 2 hours to the *Moons* coming to South, then would it be 10 of the Clock at Night.

And Note, when the *Moon* is in the Full, then the shadow of the *Moon* shews the true hour of the Night, as the shadow of the *Sun* doth the Day.

The Use of the Table Entituled, A Necessary Table for Mensuration of Superficial Measure.

In this Table are contain'd Measures of two different kinds, viz. Long, and Square Measure; that Table on the right hand is Long measure, and that on the left is Square measure. The Table of Long measure doth inform you how many Inches, Feet, Yards, Paces, Perches, &c. are contain'd in a common *English* or *Italian* Mile.

The Use of the Table of Long Measure.

In the first row of the Table you may see that in a Centesim (which is 1 link or the 100 part of 4 Pole Chain) contains 7 Inches 92 Parts; and in 1 Foot 12 Inches; in one Yard, 36 Inches; in a Pace, 60 Inches; in a Perch, Pole, or Rod, 198 Inches; in a Chain (which contains four Poles) 792 Inches; in a mile 63360 Inches; and so of the rest C 2 The

The Use of the Table of Square Measure.

This Table will inform you how many square Inches, or Feet, Yards, Paces, Perches, Chains, and Acres, are in a square mile, thus; in a square Foot are contained 144 square Inches; in a square Yard are contained 9 square Feet; in a square mile are contained 640 square Acres of Land.

The Use of the Table of Corn Measure.

Corn is commonly measured by the Bushel, Peck, or Gallon, &c. and most of these measures are constituted from the Gallon, which contains 8 Pints, in which are contained $27 \frac{1}{4}$ Cubical Inches; or if you make a square Vessel, whose sides and bottom shall contain 6 Inches, and 48 hundred parts of an Inch, it will contain the just Gallon dry measure.

For the use of the Table, it is thus; 8 Pints make 1 Gallon, 16 Pints in a Peck, 64 in a Bushel; 2 Bushels 1 Strike, &c. The two lowermost rows of figures shew the weight of Corn, according to each measure in Troy and *Averdupois* weight; the uppermost mark with the Letter T is the Troy, and A the *Averdupois*; where you may see that a Bushel of Corn weighs 64 pound Troy, and 56 *Averdupois*.

The Use of the Table of Wine Measure.

The Gallon of Wine measure is 231 Cubical Inches. Therefore to make a true Wine Gallon, make a square Vessel that hath the sides and bottom to be 6 Inches, and 15 hundred parts of an Inch; this will be a true Gallon of Wine measure.

The use of the Table is thus ; in a Gallon is contain'd 8 Pints, in a Hogshead 504 Pints, &c.

The Use of the Tables of Beer and Ale.

In the Table you will find 288 Pints is contain'd in a Barrel of Beer, and 36 Gallons in a Barrel, &c.

In a Barrel of Ale are contain'd 256 Pints, &c.

The Gallon for Ale, or Beer, contains 282 Cubical Inches ; and a square Vessel, whose sides and bottom are 6 Inches $\frac{5}{8}$ hundred parts of an Inch, which Vessel will hold a just Beer and Ale Gallon.

The Use of the Tables of Averdupois, Troy, and Apothecaries Weight.

There are two sorts of Weights used in England ; the one is called *Troy*, the other *Averdupois*, (or over-weight.) *Troy* Weight is thus ordered by the Statute, as is express'd in the Table of *Troy* Weight, that 24 Grains of Wheat makes a Penny Weight, and 20 Penny Weight makes an Ounce, &c. By this Weight Gold and Silver is constantly weigh'd ; and the Assize of Bread is set down in the Statutes according to this Weight.

And also the Apothecaries either do, or should use this Weight ; only they divide the Ounce into other parts and denominations, according to the Tables of that Weight insert'd in this Book, as 20 Grains make a Scruple, &c.

The Use of the Tables of the Assize of Bread for all Weights.

First, you must consider the price of Wheat in the market, which must neither be of the best nor worst,
but

but of the midling sort and price. Then you must consider whether the Baker be a Freeman of a City or Corporation, or not: For Freemen are allowed three pence in the Bushel more for profit than others that are not Free. These allowances are abated for in the Tables; therefore you may find the price of Wheat on the one side of the Table for free Bakers, and on the other side for Foreigners, and in the midst you have the several Weights of the Penny White, Wheaten, and Household Loaves; and by the Statutes of K. Hen. 3. and Eliz. 31. If a Baker wants but one ounce in 36 of this Assize, for the first, second, and third Fault, he may be amerced; but for the fourth Fault, he is to be set in the Pillory without redemption.

The Use of the Perpetual Table for finding the Break of Day, Suns Rising, Planetary Hours, both by night and day in the Latitude of London, every 10th day in the month.

In the first Column you have the 12 months of the Year; in the second, the 1, 11, and 22 days of the month; in the third the Break of Day, which on the 11th of February is at 5 of the Clock; in the fourth is the time of Twilight, which against the said 11th of February is at 7 of the Clock, which is the time of the ending of Twilight in the Evening; in the 5th and 6th Columns, the Rising and Setting of the Sun; in the 7th and 8th Columns, the length of the Day and Night; in the 9th and 10th Columns, the length of the Planetary Hours both by Night and Day.

*A Perpetual Table of Break of day, Sun rise, planetary
hour, etc. in the Latitude of London*

| | Break of day | Twilight | Sun rise | Sun set | Long day | Long night | H by D. | H by N. |
|-----------|-----------------|----------|-------------|------------|-------------|---------------|------------|------------|
| | h m | m | m | m | h m | m | m | m |
| Janu | 15.54 | 6.6 | 8.23 | 3.58 | 7.56 | 10.4 | 0.40 | 1.20 |
| | 15.4 | 6.18 | 7.49 | 4.11 | 8.22 | 15.58 | 0.42 | 1.18 |
| | 15.35 | 6.25 | 7.54 | 4.26 | 8.52 | 15.8 | 0.44 | 1.16 |
| | 15.27 | 6.33 | 7.57 | 4.35 | 9.26 | 14.34 | 0.47 | 1.13 |
| Febr | 15.0 | 7.0 | 6.59 | 5.10 | 9.13 | 98 | 0.50 | 1.10 |
| | 14.45 | 7.15 | 6.47 | 5.18 | 10.36 | 17.24 | 0.54 | 1.6 |
| | 14.20 | 7.40 | 6.23 | 5.37 | 11.14 | 12.46 | 0.56 | 1.4 |
| March | 13.59 | 8.1 | 6.06 | 6.12 | 0.12 | 0 | 1.01 | 0 |
| | 13.54 | 8.22 | 5.42 | 6.18 | 12.56 | 11.24 | 1.3 | 0.57 |
| | 13.55 | 8.55 | 5.20 | 6.30 | 13.20 | 10.30 | 1.7 | 0.55 |
| April | 13.38 | 9.22 | 4.58 | 7.21 | 14.4 | 9.56 | 1.10 | 0.50 |
| | 13.2 | 9.58 | 4.40 | 7.20 | 14.40 | 9.20 | 1.19 | 0.47 |
| | 13.30 | 1.30 | 4.22 | 7.38 | 15.10 | 8.44 | 1.16 | 0.44 |
| May | 13.30 | 11.30 | 3.08 | 5.12 | 15.42 | 8.18 | 1.18 | 0.42 |
| | All | Night | 3.55 | 8.9 | 16.10 | 7.50 | 1.20 | 0.40 |
| | 1 day | night | 3.50 | 8.10 | 16.20 | 7.30 | 1.21 | 0.39 |
| June | 11 and | but | 3.57 | 8.52 | 16.26 | 7.37 | 1.21 | 0.59 |
| | 11 no | Tw | 3.50 | 8.10 | 16.20 | 7.30 | 1.22 | 0.58 |
| | 1 Night | Night | 3.57 | 8.3 | 16.6 | 7.34 | 1.20 | 0.40 |
| July | 11.0 | 11.18 | 4.9 | 5.15 | 17.42 | 8.18 | 1.18 | 0.4 |
| | 11.22 | 10.58 | 4.21 | 7.39 | 17.18 | 8.37 | 1.16 | 0.44 |
| | 12.0 | 10.0 | 4.59 | 7.21 | 17.42 | 6.18 | 1.14 | 0.46 |
| August | 12.21 | 9.39 | 4.58 | 7.24 | 17.4 | 6.56 | 1.10 | 0.50 |
| | 13.0 | 9.0 | 5.40 | 6.44 | 17.28 | 10.32 | 1.7 | 0.53 |
| | 13.30 | 8.30 | 5.35 | 6.25 | 17.46 | 11.14 | 1.3 | 0.57 |
| September | 13.59 | 8.1 | 5.56 | 6.12 | 18.8 | 11.52 | 1.9 | 1.0 |
| | 14.19 | 7.41 | 6.16 | 5.44 | 18.28 | 12.32 | 1.57 | 1.3 |
| | 14.48 | 7.12 | 6.36 | 5.24 | 18.10 | 13.12 | 0.54 | 1.6 |
| October | 15.0 | 7.0 | 6.56 | 5.10 | 18.8 | 13.52 | 0.50 | 1.10 |
| | 15.18 | 6.47 | 7.15 | 4.55 | 19.50 | 14.30 | 0.47 | 1.13 |
| | 15.57 | 6.27 | 7.54 | 4.36 | 20.52 | 15.8 | 0.44 | 1.16 |
| November | 15.45 | 6.17 | 7.40 | 4.11 | 21.8 | 15.38 | 0.42 | 1.18 |
| | 15.54 | 6.6 | 8.15 | 3.59 | 22.16 | 16.4 | 0.40 | 1.20 |
| | 15.57 | 6.3 | 8.10 | 3.50 | 22.40 | 16.20 | 0.39 | 1.21 |
| December | 16.0 | 6.0 | 8.13 | 3.47 | 23.34 | 16.26 | 0.38 | 1.22 |
| | 15.8 | 6.2 | 8.8 | 3.32 | 24.16 | 16.10 | 0.39 | 1.21 |

A Table to finde y^e moveable

| Dominical letter. | Golden Numbe | From Chrill to Shrovesun | Shrovesun find: | Easter day. |
|-------------------|-------------------|--------------------------|-----------------|------------------|
| A | 2. 5. 13. 16. | 6 weeks | | Febr: 5 Mar: 26 |
| | 7. 10. 15. 18. | 7 weeks | | Febr: 12 Apr: 2 |
| | 1. 4. 9. 12. | 8 weeks | | Febr: 19 Apr: 9 |
| | 3. 6. 11. 17. | 9 weeks | | Febr: 26 Apr: 16 |
| | 8. 19. | 10 weeks | | Mar: 25 Apr: 23 |
| B | 2. 5. 13. 16. | 6 weeks | 1 day | Febr: 6 Mar: 27 |
| | 4. 7. 10. 15. 18. | 7 weeks | 1 day | Febr: 13 Apr: 3 |
| | 1. 9. 12. 17. | 8 weeks | 1 day | Febr: 20 Apr: 10 |
| | 3. 6. 11. 14. | 9 weeks | 1 day | Febr: 27 Apr: 17 |
| | 8. 19. | 10 weeks | 1 day | Mar: 6 Apr: 24 |
| C | 2. 5. 10. 13. 16. | 6 weeks | 2 days | Febr: 7 Mar: 28 |
| | 4. 7. 12. 15. 18. | 7 weeks | 2 days | Febr: 14 Apr: 4 |
| | 1. 6. 9. 12. 17. | 8 weeks | 2 days | Febr: 21 Apr: 11 |
| | 3. 11. 14. 10. | 9 weeks | 2 days | Febr: 28 Apr: 18 |
| | 8. | 10 weeks | 2 days | Mar: 7 Apr: 25 |
| D | 10. | 5 weeks | 3 days | Febr: 1 Mar: 28 |
| | 2. 5. 10. 13. | 6 weeks | 3 days | Febr: 8 Mar: 29 |
| | 4. 7. 12. 15. 18. | 7 weeks | 3 days | Febr: 15 Apr: 5 |
| | 1. 6. 9. 17. | 8 weeks | 3 days | Febr: 22 Apr: 12 |
| | 3. 8. 11. 14. 10. | 9 weeks | 3 days | Mar: 1 Apr: 19 |
| E | 5. 16. | 5 weeks | 4 days | Febr: 2 Mar: 23 |
| | 3. 10. 13. 18. | 6 weeks | 4 days | Febr: 9 Mar: 26 |
| | 1. 4. 7. 12. 15. | 7 weeks | 4 days | Febr: 20 Apr: 6 |
| | 6. 9. 14. 17. | 8 weeks | 4 days | Febr: 27 Apr: 13 |
| | 3. 8. 11. 19. | 9 weeks | 4 days | Mar: 2 Apr: 20 |
| F | 5. 16. | 5 weeks | 5 days | Febr: 3 Mar: 24 |
| | 3. 7. 10. 13. 18. | 6 weeks | 5 days | Febr: 10 Mar: 31 |
| | 1. 4. 12. 15. | 7 weeks | 5 days | Febr: 18 Apr: 7 |
| | 3. 6. 9. 14. 17. | 8 weeks | 5 days | Febr: 24 Apr: 14 |
| | 8. 11. 19. | 9 weeks | 5 days | Mar: 3 Apr: 21 |
| G | 5. 13. 16. | 5 weeks | 6 days | Febr: 4 Mar: 25 |
| | 3. 7. 10. 18. | 6 weeks | 6 days | Febr: 11 Apr: 1 |
| | 1. 4. 9. 12. 15. | 7 weeks | 6 days | Febr: 18 Apr: 8 |
| | 3. 6. 14. 17. | 8 weeks | 6 days | Febr: 25 Apr: 15 |
| | 8. 11. 19. | 9 weeks | 6 days | Mar: 4 Apr: 22 |

Feasts for ever by the Dominical letter and Golden Number.

| Rogation Sund: | Ascension day: | Whit Sund: | Trinity Sund: | Advent Sund: |
|-------------------|-------------------|---------------|------------------|-----------------|
| Apr: 30 | May 4 | May 14 | May 21 | Dec: 3 |
| May 7 | May 11 | May 21 | May 28 | Dec: 3 |
| May 14 | May 18 | May 28 | June 4 | Dec: 3 |
| May 21 | May 25 | June 4 | June 11 | Dec: 3 |
| May 28 | June 1 | June 11 | June 18 | Dec: 3 |
| May 1 | May 5 | May 15 | May 22 | Nov: 27 |
| May 8 | May 12 | May 22 | May 29 | Nov: 27 |
| May 15 | May 19 | May 29 | June 5 | Nov: 27 |
| May 22 | May 26 | June 5 | June 12 | Nov: 27 |
| May 29 | June 2 | June 12 | June 19 | Nov: 27 |
| May 2 | May 6 | May 16 | May 23 | Nov: 28 |
| May 9 | May 13 | May 23 | May 30 | Nov: 28 |
| May 16 | May 20 | May 30 | June 6 | Nov: 28 |
| May 23 | May 27 | June 6 | June 13 | Nov: 28 |
| May 30 | June 3 | June 13 | June 20 | Nov: 28 |
| Apr: 26 | Apr: 30 | May 10 | May 17 | Nov: 29 |
| May 3 | May 7 | May 17 | May 24 | Nov: 29 |
| May 10 | May 14 | May 24 | May 31 | Nov: 29 |
| May 17 | May 21 | May 31 | June 7 | Nov: 29 |
| May 24 | May 28 | June 7 | June 14 | Nov: 29 |
| Apr: 27 | May 1 | May 11 | May 18 | Nov: 30 |
| May 4 | May 8 | May 18 | May 25 | Nov: 30 |
| May 11 | May 15 | May 25 | June 1 | Nov: 30 |
| May 18 | May 22 | May 31 | June 8 | Nov: 30 |
| May 25 | May 29 | June 8 | June 15 | Nov: 30 |
| Apr: 28 | May 2 | May 12 | May 19 | Dec: 1 |
| May 5 | May 9 | May 19 | May 26 | Dec: 1 |
| May 12 | May 16 | May 26 | June 2 | Dec: 1 |
| May 19 | May 23 | June 2 | June 9 | Dec: 1 |
| May 26 | May 30 | June 9 | June 16 | Dec: 1 |
| Apr: 29 | May 3 | May 13 | May 20 | Dec: 2 |
| May 6 | May 10 | May 20 | May 27 | Dec: 2 |
| May 13 | May 17 | May 27 | June 3 | Dec: 2 |
| May 20 | May 24 | June 3 | June 10 | Dec: 2 |
| May 27 | May 31 | June 10 | June 17 | Dec: 2 |

A Table of y Essential Dignities of the Planets according to Polomy.

| Signes. | Lignt. | Dign. | No. of Exaltat. | ion. | The Terms of the Planets. | The faces of the Planets. | | | | Demi-ment. | Fall. |
|---------|--------|-------|-----------------|------|---------------------------|---------------------------|---|--------|--------|------------|-------|
| | | | | | | ♂ | ♀ | ☿ | ♁ | | |
| ♈ | ♂ | D | 19 | ♂ | ♂ . 14 ♀ . 22 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♉ | ♂ | N | 3 | ♂ | ♂ . 15 ♀ . 21 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♊ | ♂ | D | 6 | ♂ | ♂ . 1 ♀ . 21 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♋ | ♂ | N | 15 | ♂ | ♂ . 13 ♀ . 20 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♌ | ♂ | D | 6 | ♂ | ♂ . 13 ♀ . 19 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♍ | ♂ | N | 15 | ♂ | ♂ . 13 ♀ . 18 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♎ | ♂ | D | 2 | ♂ | ♂ . 11 ♀ . 19 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♏ | ♂ | N | 6 | ♂ | ♂ . 14 ♀ . 21 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♐ | ♂ | D | 3 | ♂ | ♂ . 14 ♀ . 19 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♑ | ♂ | N | 6 | ♂ | ♂ . 12 ♀ . 19 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♒ | ♂ | D | 6 | ♂ | ♂ . 12 ♀ . 20 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |
| ♓ | ♂ | N | 25 | ♂ | ♂ . 14 ♀ . 20 | ♂ | ♂ | ♂ . 10 | ♂ . 20 | ♂ . 30 | ♂ |

A Table shewing what Planets Rules every hour of the Day and Night.

| the hours of y ^e Day. | | | | | | | | | | | | | | the hours of y ^e Night. | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|---|------------------------------------|---|---|---|---|---|---|---|----|----|----|--|--|--|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | | |
| Sund | ☉ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | | | |
| Mon | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | | | |
| Tues | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | | | |
| Wed | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | | | |
| Thurs | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | | | |
| Fry | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | | | |
| Satur | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | ☿ | | | |

Note that in every day in the week there is appropriated a several Planets as @ to
 Sunday the Monday & Tuesday by & therefore each planet governs y^e first hours by this
 Table y^e 2^d way perceive that y^e Sun governs y^e first hour after Sun rising on Sunday & so on
 the third y^e Moon governs y^e first planet after the Sun & so on & governs y^e first planet after the Moon
 that is after the Sun for y^e 2^d & 3^d as you may perceive in the same Table.



The Use of the Table for finding the Moveable Feasts, by the help of the Golden Number and Dominical Letter.

The first Column sheweth the *Dominical Letters*; the second sheweth the *Prime or Golden Number*; the rest of the Columns shews the *Moveable Feasts*, which are thus to be used; as explained in this following

Example.

Suppose you would know what day of the month any of the usual Feasts fall on in the Year 1701.

First, you find by the former Tables that E is the *Dominical Letter* for that Year, and also 11 is the *Prime (or Golden Number)* therefore seek the *Dominical Letter* on the left side of the Table, and under the Title of *Golden Number*, between the two Lines, the one above, the other below, find 11 the *Golden Number*, and in the same row you will find that *Shrove-Sunday* falls on March the 2d, *Easter-day* the 20th of April, *Rogation-Sunday* May the 12th, *Ascension-Day* May the 29th, *Whit-Sunday* May the 8th, *Trinity-Sunday* June the 15th, *Advent-Sunday* November the 30th.

The use of the Table of the Essential Dignities of the Planets.

Every Planet hath two Signs for his House, except ☉ and ♃, they have but one apiece: ♄ hath ♋ and ♏; ♅ hath ♊ and ♋; ♆ hath ♍ and ♏; ☿ hath ♏; ♁ hath ♋, &c. One of these Houses is called *Diurnal*, noted with the Letter D; the other is *Nocturnal*, noted by the Letter N. In these Signs the Planets have their Exaltations, which are noted in the third Column; as the ☉ in the 19 ♋. ♃ in the 3 ♏. ♄ in ♏ 3 degrees, &c. are exalted. These

These 12 Signs are divided into four Triplicities; the 4th Column tells you what Planet, or Planets, both Night and Day governs each Triplicity; as over against γ . α . β . you find \odot . ψ . viz. \odot governeth by Day in that Triplicity. Over against δ . η . ν . you find ζ and μ , viz. that ζ hath dominion by Day, and μ by Night, in that Triplicity. Over against ι . κ . π . you find ϵ . ϕ . which rule as aforesaid. Over against σ . θ . χ . you find δ . which (according to *Ptolemy*) ruleth only that Triplicity both Day and Night. Over against γ , in the 5, 6, 7, 8, 9 Columns, you find ψ 6. ζ 14. which tells you the first 6 degrees of γ are the terms of ψ . from 6 to 14, the terms of ζ , &c.

Over against γ , in the 10, 11, 12 Columns, you find δ 10. \odot 20. ζ 30. viz. the first 10 degrees of γ are the Face of δ ; from 10 to 20, the Face of \odot ; from 20 to 30, the Face of ζ , &c.

Over against γ , in the 13 Column, you find ζ detriment, viz. ζ being in γ , is in a Sign opposite to one of her Houses, and so is said to be in her Detriment.

Over against γ in the 14 Column, you find ϵ , and over his head fall; that is, ϵ when he is in γ , opposite to α (his Exaltation) and so is infortunate, &c.

A Planet dignified as aforesaid, is said to be in his Essential Dignity. Accidental Dignities are, when Planets are casually in an Angle or succedent House, direct free from combustion.

A Planet in his House or Exaltation, being significant of any Person, denotes him to be in a happy and prosperous Condition, not wanting for the Goods of this Life.

A Planet debilitated, as being in detriment, or fall, and afflicted, denotes the Querent to be in a very

very low and mean Condition, much dejected and disconsolate.

The use of the Table of the Planetary or Unequal Hours for every Night and Day in the Year.

To find what Planetary Hour it is, and also what Planet reigneth that Hour.

You must learn at what hour and minute the Sun doth rise upon the day proposed; which you may find in each page of the Almanack, and also the true hour of the day at any time proposed: Then observe how many hours and minutes the said time is after Sun rising; the number of which hours multiply by 60, and to the Product add the odd minutes (if there be any) then the Aggregate divided by the number of minutes that a Planet reigneth, the Quotient will shew the number of a Planetary hour.

Example.

Suppose that when the Sun riseth at 8 of the Clock, as upon Saturday the 8th of January 1701 it doth, and it be required to know what Planetary hour it is at 11 a Clock before noon the same day; therefore because 11 a Clock is 3 hours after 8, the Sun's rising, multiply 3 by 60, and the Product is 180; which being divided by 45 (for so many minutes are in a Planetary hour that day) the Quotient is 4 hours 30 minutes: Therefore you may conclude that there are 30 minutes spent of the Planetary hour.

Having found what Planetary hour it is, and would know what Planet doth reign that hour, do thus;

Seek the day of the Week in the precedent Table, and the hour of the day on the top of the Table, and in the common Angle of Meeting you will find the

Planet that governeth that hour: And in the other precedent Table on the right hand, which is for the Night, is the Planet that governeth the same hour by Night.

Example.

Upon the aforesaid day (the 8th of January, 1701) it is required to find what Planet reigneth at 11 a Clock before Noon the same day; Therefore according to the aforesaid Rule, you may find there are 30 minutes spent of the 4th Planetary hour; therefore first find *Monday* on the side of the said precedent Table, then look for 4 in the head of the Table, and in the common Angle of Meeting you will find ♄ to be the Governour that rules the 4th hour of the same day.

Of the Properties and natural Effects of the Seven Planets.

Having now shewed what Planet rules each hour, it will be necessary to shew the Natures, Qualities, and Dispositions of them.

♄ Denotes in general, Lands, Houses, Tenements, Country-men, Ancient People, &c.

♃ Signifies Judges, Senators, Divines, Riches, Law, Religion, &c.

♂ Signifies Soldiers, Physicians, War, Strife and Debate, Theft, and all manner of Cruelty, &c.

☉ Signifies Honour, Greatness, Noble Persons of all degrees.

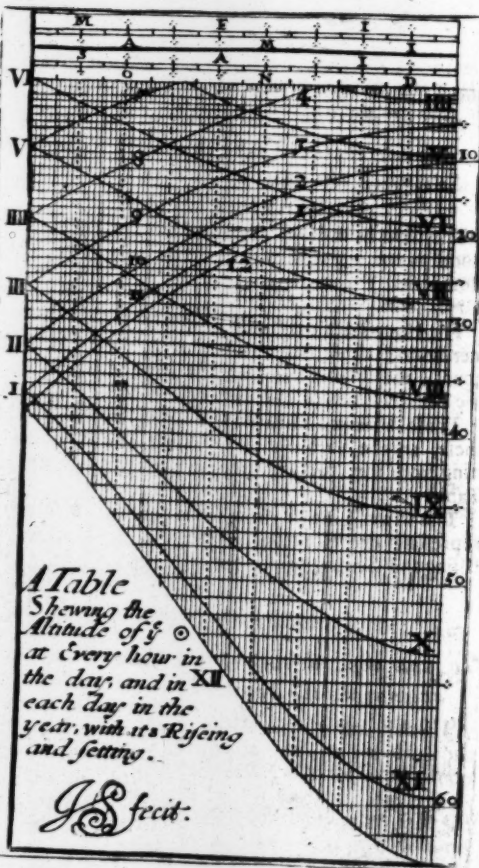
♀ Denotes Women, Pleasure, Pastimes, all kinds of Delights, Mirth, sweet Journeys, &c.

♁ Denotes all kinds of Scribes or Secretaries, Mathematicians, Servants, &c.

♁ Signifies Women in general, all Common and Vulgar Persons.

The





*A Table
Shewing the
Altitude of \odot
at Every hour in
the day, and in XII
each day in the
year, with its Rising
and setting.*

J. S. fecit.

The Use of the Table that sheweth the Altitude of the Sun every hour of the day, and each day of the Year; with the Rising and Setting of the Sun.

The Description of the Table.

The Months are on the head of the Table, each Month noted with the proper Letter belonging to the Month, as *J* for *January*, *F* for *February*, *M* for *March*, &c.

The Hour lines that bend downward, are the Summer hours, those that bend upward, are the Winter-hours; the small Lines that fall perpendicularly, are the Parallel Lines of the days of the Year.

Those that run thwart them at right Angles with these, are the Parallels of the Sun's Altitude, proceeding from the Tangent Line on the right side of the Table.

The lower Line of the top Margent of the Months, represents the Horizon, where you are to find the Rising and Setting of the Sun.

The Uses follow.

To find the Altitude of the Sun on any hour and day in the Year.

I would know what Altitude the Sun will have the 10th day of *May*, at 9 of the Clock in the Forenoon, or at 3 in the Afternoon, which is all one.

Therefore find the 10th of *May* in the Margent of the Months on the top of the Table; then find the hour of 9 on the right hand of the Table, and note the hour-line which passes from 8 on the right side,

D 2

(which

(which are Morning hours) to 3 on the left side (which are the Afternoon-hours;) then direct your Eye down from the 10th of May, in one of the nearest lines that proceeds down-right, until it meets and intersects the hour-line; then direct your Eye from that Intersection, to one of the thwart lines that proceeds from the hour-line, and where that line meets with the Tangent-line (on the right side of the Table) to 43, which is the Altitude of the Sun at that day and hour aforesaid: the same is to be understood also of the Winter-hours.

To find the Rising and Setting of the Sun by the same Table.

The aforesaid 10th of May, note what hour-line toucheth the lower line of the Margent of Months, and there you will see that the hour of 4, which proceeds from the Morning hour-lines, and you may see that the end of the 4 a Clock line, doth come short of the 10th day of May; which shews that the Sun rises a little after 4 of the Clock; and so much after 4 as the rising of the Sun is, so much doth the Sun set before 8 at Night.

The Explanation and Use of the Tables of the Suns Right Ascension; and of the Table of the Stars Right Ascension and Declination.

The Explanation of the Tables.

In the Table of the Suns Right Ascension, the first Page contains the first six Months of the Year, and the next Page the other six Months.

In

A Table of ȳ Suns Right Ascen:

| | July. | August | Septem | Octo: | Novem | Decem |
|------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Days | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: |
| | H · M | H · M | H · M | H · M | H · M | H · M |
| 1 | 07.23 | 09.25 | 11.19 | 13.08 | 15.07 | 17.15 |
| 2 | 07.27 | 09.29 | 11.23 | 13.13 | 15.11 | 17.20 |
| 3 | 07.31 | 09.33 | 11.26 | 13.15 | 15.15 | 17.25 |
| 4 | 07.35 | 09.37 | 11.30 | 13.19 | 15.19 | 17.29 |
| 5 | 07.39 | 09.40 | 11.33 | 13.22 | 15.23 | 17.34 |
| 6 | 07.43 | 09.44 | 11.37 | 13.26 | 15.27 | 17.38 |
| 7 | 07.47 | 09.48 | 11.41 | 13.30 | 15.31 | 17.42 |
| 8 | 07.51 | 09.51 | 11.44 | 13.34 | 15.36 | 17.47 |
| 9 | 07.55 | 09.55 | 11.48 | 13.38 | 15.40 | 17.51 |
| 10 | 07.59 | 09.58 | 11.51 | 13.41 | 15.45 | 17.56 |
| 11 | 08.03 | 10.02 | 11.55 | 13.45 | 15.49 | 18.00 |
| 12 | 08.07 | 10.06 | 11.59 | 13.49 | 15.53 | 18.05 |
| 13 | 08.11 | 10.10 | 12.02 | 13.53 | 15.58 | 18.09 |
| 14 | 08.15 | 10.14 | 12.06 | 13.57 | 16.02 | 18.14 |
| 15 | 08.19 | 10.17 | 12.09 | 14.00 | 16.07 | 18.19 |
| 16 | 08.23 | 10.21 | 12.13 | 14.04 | 16.11 | 18.24 |
| 17 | 08.27 | 10.25 | 12.17 | 14.08 | 16.15 | 18.28 |
| 18 | 08.31 | 10.28 | 12.20 | 14.12 | 16.19 | 18.33 |
| 19 | 08.35 | 10.32 | 12.24 | 14.16 | 16.23 | 18.37 |
| 20 | 08.39 | 10.35 | 12.27 | 14.20 | 16.28 | 18.41 |
| 21 | 08.43 | 10.39 | 12.31 | 14.24 | 16.32 | 18.45 |
| 22 | 08.47 | 10.43 | 12.35 | 14.28 | 16.36 | 18.49 |
| 23 | 08.51 | 10.46 | 12.38 | 14.32 | 16.40 | 18.54 |
| 24 | 08.55 | 10.50 | 12.42 | 14.36 | 16.44 | 18.58 |
| 25 | 08.58 | 10.53 | 12.45 | 14.39 | 16.49 | 19.03 |
| 26 | 09.02 | 10.57 | 12.49 | 14.43 | 16.53 | 19.07 |
| 27 | 09.06 | 11.01 | 12.53 | 14.47 | 16.57 | 19.11 |
| 28 | 09.10 | 11.04 | 12.57 | 14.51 | 17.02 | 19.16 |
| 29 | 09.14 | 11.08 | 13.01 | 14.55 | 17.06 | 19.20 |
| 30 | 09.17 | 11.11 | 13.04 | 14.59 | 17.11 | 19.25 |
| 31 | 09.21 | 11.15 | | 15.03 | | 19.30 |

**A Table of γ Magnitudes, Right
Ascension in Hours and Minuts, and
Degrees and Minuts, & γ Declination
North or South of 33 fixed Stars.**

| <i>Names of γ Stars.</i> | <i>M</i> | <i>R.Asc.</i> | | <i>Decl.</i> | | <i>N</i> |
|---|----------|---------------|------------|--------------|-----------|----------|
| | | <i>D.</i> | <i>MD.</i> | <i>M.</i> | <i>H.</i> | |
| <i>Pole Star or γ in γ the bear</i> | 2 | 0 | 55 | 87 | 33 | 0.52 N |
| <i>Andromedæ Circles.</i> | 2 | 12 | 31 | 33 | 50 | 0.50 N |
| <i>Medusæ head.</i> | 3 | 41 | 27 | 39 | 35 | 2.46 N |
| <i>Perseus right side.</i> | 2 | 44 | 30 | 48 | 33 | 2.58 N |
| <i>Middle of the Pleiades.</i> | 5 | 51 | 22 | 23 | 06 | 3.26 N |
| <i>Bulls eye.</i> | 1 | 64 | 0 | 15 | 48 | 4.16 N |
| <i>Hercus or Goat.</i> | 1 | 72 | 44 | 45 | 36 | 4.51 N |
| <i>Orions left foot.</i> | 1 | 74 | 30 | 8 | 38 | 4.58 S |
| <i>Midstar in Orions Girdle.</i> | 2 | 79 | 45 | 1 | 28 | 5.19 S |
| <i>Orions right shoulder.</i> | 2 | 84 | 5 | 7 | 18 | 5.36 N |
| <i>Ariga or Waggoner.</i> | 2 | 84 | 45 | 44 | 56 | 5.39 N |
| <i>Great Dog.</i> | 1 | 97 | 24 | 16 | 13 | 6.30 N |
| <i>Castor or Apollo.</i> | 2 | 108 | 00 | 52 | 30 | 7.12 N |
| <i>Little dog.</i> | 1 | 110 | 20 | 6 | 6 | 7.21 N |
| <i>Poullux or Hercules.</i> | 2 | 110 | 35 | 28 | 48 | 7.22 N |
| <i>Hydraes heart.</i> | 1 | 137 | 36 | 7 | 10 | 9.10 S |
| <i>Lyons heart.</i> | 1 | 147 | 30 | 13 | 39 | 9.50 N |
| <i>Great Bears fore guard.</i> | 2 | 166 | 48 | 63 | 32 | 10.43 N |
| <i>Lyons tail.</i> | 1 | 172 | 45 | 16 | 32 | 11.31 N |
| <i>Virgins Spike.</i> | 1 | 196 | 43 | 9 | 11 | 13.07 N |
| <i>Last in Great Bears tail.</i> | 2 | 203 | 36 | 51 | 5 | 13.34 N |
| <i>Arcturus.</i> | 1 | 209 | 56 | 21 | 4 | 14.00 N |
| <i>Little Bears fore guard.</i> | 2 | 222 | 46 | 75 | 3 | 14.52 N |
| <i>Brightest in γ Crown.</i> | 3 | 231 | 00 | 27 | 43 | 15.24 N |
| <i>Scorpions heart.</i> | 1 | 242 | 23 | 25 | 37 | 16.09 S |
| <i>Hercules head.</i> | 3 | 254 | 40 | 14 | 51 | 16.59 N |
| <i>Lynx or harp.</i> | 1 | 276 | 47 | 38 | 30 | 18.45 N |
| <i>Eagle or Vulture.</i> | 1 | 293 | 28 | 8 | 119 | 19.35 N |
| <i>Virgins tail.</i> | 2 | 307 | 30 | 44 | 5 | 20.30 N |
| <i>Dolphins head.</i> | 3 | 307 | 53 | 15 | 0 | 20.32 N |
| <i>Pegasus mouth.</i> | 1 | 321 | 50 | 8 | 19 | 21.27 N |
| <i>Pomahant.</i> | 3 | 339 | 30 | 31 | 17 | 22.38 S |
| <i>Pegasus lower wing.</i> | 2 | 358 | 50 | 23 | 22 | 23.55 N |

*A Table of the Latitudes of the Principal -
Cities, Towns, and - Islands
in & about Great Britain & Ireland*

| ENGLAND | 0 . ' | WALES | 0 . ' |
|---------------------------|--------|-----------------------|--------|
| Arundel - - - - - | 51. 00 | Anglesey - - - - - | 53. 28 |
| Barwick - - - - - | 55. 54 | Brecknock - - - - - | 52. 30 |
| Bedford - - - - - | 52. 15 | Cardigan - - - - - | 52. 12 |
| Bristol - - - - - | 51. 55 | Cardiff - - - - - | 51. 58 |
| Buckingham - - - - - | 52. 10 | Carmarvon - - - - - | 51. 18 |
| Cambridge - - - - - | 52. 12 | Denbigh - - - - - | 53. 15 |
| Canterbury - - - - - | 51. 25 | Flint - - - - - | 53. 18 |
| Carlisle - - - - - | 55. 20 | Llandysse - - - - - | 51. 36 |
| Chesham - - - - - | 53. 20 | Monmouth - - - - - | 51. 51 |
| Chichester - - - - - | 50. 48 | Montgomery - - - - - | 51. 56 |
| Colchester - - - - - | 52. 08 | Pembroke - - - - - | 51. 46 |
| Dover - - - - - | 51. 40 | Rednor - - - - - | 52. 40 |
| Derby - - - - - | 53. 00 | St. David's - - - - - | 52. 00 |
| Dorchester - - - - - | 50. 50 | ISLANDS | |
| Durham - - - - - | 55. 00 | Garnsey - - - - - | 49. 30 |
| Exeter - - - - - | 50. 50 | Larsey - - - - - | 49. 12 |
| Falmouth - - - - - | 50. 22 | Lundy - - - - - | 51. 22 |
| Gloucester - - - - - | 51. 12 | Man - - - - - | 54. 14 |
| Hereford - - - - - | 52. 00 | Portland - - - - - | 50. 30 |
| Hertford - - - - - | 51. 50 | Wight - - - - - | 50. 39 |
| King's Lynn - - - - - | 52. 07 | SCOTLAND | |
| Leicester - - - - - | 52. 30 | Aberdeen - - - - - | 57. 32 |
| Lincoln - - - - - | 53. 20 | Dumblain - - - - - | 56. 21 |
| Liverpool - - - - - | 53. 20 | Dundee - - - - - | 56. 30 |
| London - - - - - | 51. 52 | Dunkel - - - - - | 56. 48 |
| Northampton - - - - - | 52. 24 | Edinburgh - - - - - | 56. 00 |
| Nottingham - - - - - | 52. 45 | Glasgow - - - - - | 55. 50 |
| Newcastle - - - - - | 55. 12 | Orkney - - - - - | 60. 06 |
| Oxford - - - - - | 51. 43 | St. Andrews - - - - - | 56. 59 |
| Portsmouth - - - - - | 51. 08 | Starling - - - - - | 56. 12 |
| Reading - - - - - | 51. 40 | IRELAND | |
| Salisbury - - - - - | 51. 12 | Antrim - - - - - | 54. 30 |
| Stafford - - - - - | 52. 50 | Argyll - - - - - | 54. 10 |
| Stirling - - - - - | 52. 50 | Armagh - - - - - | 54. 14 |
| Stoke Newington - - - - - | 52. 44 | Clare - - - - - | 52. 54 |
| Stroud - - - - - | 50. 30 | Cork - - - - - | 51. 57 |
| Warwick - - - - - | 52. 30 | Droghda - - - - - | 53. 36 |
| Winchester - - - - - | 50. 40 | Dublin - - - - - | 53. 27 |
| Worcester - - - - - | 52. 25 | Dundall - - - - - | 53. 52 |
| York - - - - - | 54. 00 | Galloway - - - - - | 53. 02 |
| | | Kildare - - - - - | 53. 00 |
| | | Knockfergus - - - - - | 54. 57 |
| | | King's - - - - - | 51. 41 |
| | | Limerick - - - - - | 52. 30 |
| | | Waterford - - - - - | 52. 00 |
| | | Wexford - - - - - | 52. 18 |

A Table of y Sun's Right Ascen:

| | Janu.: | Febr: | March | April. | May. | June. |
|------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Days | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: | Right Ascen: |
| | H . M | H . M | H . M | H . M | H . M | H . M |
| 1 | 19.35 | 21.42 | 23.28 | 01.21 | 03.14 | 05.19 |
| 2 | 19.39 | 21.46 | 23.32 | 01.25 | 03.18 | 05.23 |
| 3 | 19.43 | 21.50 | 23.36 | 01.29 | 03.22 | 05.27 |
| 4 | 19.47 | 21.54 | 23.39 | 01.35 | 03.26 | 05.31 |
| 5 | 19.51 | 21.58 | 23.43 | 01.36 | 03.30 | 05.36 |
| 6 | 19.56 | 22.02 | 23.46 | 01.40 | 03.34 | 05.40 |
| 7 | 20.00 | 22.06 | 23.50 | 01.44 | 03.38 | 05.44 |
| 8 | 20.04 | 22.10 | 23.53 | 01.47 | 03.42 | 05.48 |
| 9 | 20.09 | 22.14 | 23.57 | 01.51 | 03.46 | 05.52 |
| 10 | 20.13 | 22.17 | 00.01 | 01.54 | 03.50 | 05.56 |
| 11 | 20.17 | 22.21 | 00.05 | 01.58 | 03.54 | 06.00 |
| 12 | 20.22 | 22.25 | 00.08 | 02.02 | 03.58 | 06.04 |
| 13 | 20.26 | 22.29 | 00.12 | 02.06 | 04.02 | 06.08 |
| 14 | 20.30 | 22.33 | 00.15 | 02.10 | 04.06 | 06.12 |
| 15 | 20.34 | 22.36 | 00.19 | 02.13 | 04.10 | 06.17 |
| 16 | 20.38 | 22.40 | 00.23 | 02.17 | 04.14 | 06.21 |
| 17 | 20.42 | 22.44 | 00.26 | 02.21 | 04.18 | 06.25 |
| 18 | 20.46 | 22.48 | 00.30 | 02.25 | 04.22 | 06.29 |
| 19 | 20.50 | 22.52 | 00.33 | 02.30 | 04.26 | 06.33 |
| 20 | 20.54 | 22.55 | 00.37 | 02.32 | 04.30 | 06.38 |
| 21 | 20.58 | 22.59 | 00.41 | 02.36 | 04.34 | 06.42 |
| 22 | 21.03 | 23.03 | 00.44 | 02.40 | 04.38 | 06.46 |
| 23 | 21.07 | 23.06 | 00.48 | 02.44 | 04.42 | 06.50 |
| 24 | 21.11 | 23.10 | 00.52 | 02.48 | 04.46 | 06.54 |
| 25 | 21.15 | 23.13 | 00.55 | 02.51 | 04.50 | 06.58 |
| 26 | 21.19 | 23.17 | 00.59 | 02.55 | 04.54 | 07.02 |
| 27 | 21.23 | 23.21 | 01.03 | 02.59 | 04.58 | 07.06 |
| 28 | 21.27 | 23.25 | 01.06 | 03.03 | 05.02 | 07.10 |
| 29 | 21.31 | | 01.10 | 03.07 | 05.06 | 07.14 |
| 30 | 21.35 | | 01.14 | 03.10 | 05.11 | 07.19 |
| 31 | 21.38 | | 01.17 | | 05.15 | |

In the first Column towards the left hand, are the days of the Month, and in the other Columns is the Sun's Right Ascension in hours and minutes.

In the Table of the Stars Right Ascension, there are six Columns; in the first, towards the left hand, are the names of the Stars; in the second are the Stars Magnitude; in the third, the Right Ascension of the Stars in degrees and minutes; in the fourth, the Declination in degrees and minutes; in the fifth the Right Ascension in hours and minutes; and in the sixth, the Denomination of the Declination, whether North or South.

The Use of the Tables.

First, To find the time of the Stars coming upon the Meridian.

The Rule.

When you have found the Right Ascension of the Sun and Stars for any day proposed; then subtract the Right Ascension of the Sun from the Right Ascension of the Stars: but if the Stars Right Ascension be less than that of the Sun, add thereto 24 hours, and then subtract one from the other; the remainder after subtraction is the time of the Stars coming upon the Meridian from Noon: and if the remainder exceed 12 hours, subtract 12 hours therefrom, and then the remainder is the time from Mid-night.

Example 1.

Suppose the time that the middle of the *Pleiades* come on the Meridian, were required to the 5th day of November, 1700.

I find the Stars Right Ascension to be 3 hours 26 minutes, and the Sun's Right Ascension to be 15 hours 23 minutes.

Now

Now because the Sun's Right Ascension is more than the Stars, therefore add to the Stars Right Ascension 24 hours, which makes 27 hours 26 minutes; from which subtracting the Sun's Right Ascension, there remains 12 hours 3 minutes; from which subtracting 12 hours, there remains 3 minutes: which is the time of the *Pleiades* coming to the Meridian after Mid-night, which was required.

Example 2.

Suppose the time of *Pegasus lower Wing* coming upon the Meridian on the said 5th of November, 1700.

I find in the Table the Stars Right Ascension to be 23 h. 55 m. and the Sun's Right Ascension to be as before, 15 hours 23 minutes; which being subtracted from the Stars Right Ascension, leaves 8 hours 32 minutes, the true time of the Stars coming to the Meridian Afternoon.

Secondly, The time being given, to find what Star will come to the Meridian about the said time

The Rule.

To the Sun's Right Ascension add the time from Noon, at which the Stars coming to the Meridian is required, the sum is the Right Ascension of the Star that will come to the Meridian at that time; with which enter the Table, and look what Stars Right Ascension agrees with the Right Ascension before found, or nearest thereto, and that is the Star sought for.

Example.

Suppose April the 1st, I desire to know what Star will come upon the Meridian at 3 hours after Mid-night.

The



| A Table for the ready finding of the Prime or Golden Number for ever | | 100 | | | | | | | | | |
|---|--|-------|--|--|--|--|--|--|--|--|--|
| | | 200 | | | | | | | | | |
| | | 300 | | | | | | | | | |
| | | 400 | | | | | | | | | |
| | | 500 | | | | | | | | | |
| | | 600 | | | | | | | | | |
| | | 700 | | | | | | | | | |
| | | 800 | | | | | | | | | |
| | | 900 | | | | | | | | | |
| | | 1000 | | | | | | | | | |
| | | 2000 | | | | | | | | | |
| | | 2100 | | | | | | | | | |
| | | 2200 | | | | | | | | | |
| | | 2300 | | | | | | | | | |
| | | 2400 | | | | | | | | | |
| | | 2500 | | | | | | | | | |
| | | 2600 | | | | | | | | | |
| | | 2700 | | | | | | | | | |
| | | 2800 | | | | | | | | | |
| | | 2900 | | | | | | | | | |
| | | 3000 | | | | | | | | | |
| | | 3100 | | | | | | | | | |
| | | 3200 | | | | | | | | | |
| | | 3300 | | | | | | | | | |
| | | 3400 | | | | | | | | | |
| | | 3500 | | | | | | | | | |
| | | 3600 | | | | | | | | | |
| | | 3700 | | | | | | | | | |
| | | 3800 | | | | | | | | | |
| | | 3900 | | | | | | | | | |
| | | 4000 | | | | | | | | | |
| | | 4100 | | | | | | | | | |
| | | 4200 | | | | | | | | | |
| | | 4300 | | | | | | | | | |
| | | 4400 | | | | | | | | | |
| | | 4500 | | | | | | | | | |
| | | 4600 | | | | | | | | | |
| | | 4700 | | | | | | | | | |
| | | 4800 | | | | | | | | | |
| | | 4900 | | | | | | | | | |
| | | 5000 | | | | | | | | | |
| | | 5100 | | | | | | | | | |
| | | 5200 | | | | | | | | | |
| | | 5300 | | | | | | | | | |
| | | 5400 | | | | | | | | | |
| | | 5500 | | | | | | | | | |
| | | 5600 | | | | | | | | | |
| | | 5700 | | | | | | | | | |
| | | 5800 | | | | | | | | | |
| | | 5900 | | | | | | | | | |
| | | 6000 | | | | | | | | | |
| | | 6100 | | | | | | | | | |
| | | 6200 | | | | | | | | | |
| | | 6300 | | | | | | | | | |
| | | 6400 | | | | | | | | | |
| | | 6500 | | | | | | | | | |
| | | 6600 | | | | | | | | | |
| | | 6700 | | | | | | | | | |
| | | 6800 | | | | | | | | | |
| | | 6900 | | | | | | | | | |
| | | 7000 | | | | | | | | | |
| | | 7100 | | | | | | | | | |
| | | 7200 | | | | | | | | | |
| | | 7300 | | | | | | | | | |
| | | 7400 | | | | | | | | | |
| | | 7500 | | | | | | | | | |
| | | 7600 | | | | | | | | | |
| | | 7700 | | | | | | | | | |
| | | 7800 | | | | | | | | | |
| | | 7900 | | | | | | | | | |
| | | 8000 | | | | | | | | | |
| | | 8100 | | | | | | | | | |
| | | 8200 | | | | | | | | | |
| | | 8300 | | | | | | | | | |
| | | 8400 | | | | | | | | | |
| | | 8500 | | | | | | | | | |
| | | 8600 | | | | | | | | | |
| | | 8700 | | | | | | | | | |
| | | 8800 | | | | | | | | | |
| | | 8900 | | | | | | | | | |
| | | 9000 | | | | | | | | | |
| | | 9100 | | | | | | | | | |
| | | 9200 | | | | | | | | | |
| | | 9300 | | | | | | | | | |
| | | 9400 | | | | | | | | | |
| | | 9500 | | | | | | | | | |
| | | 9600 | | | | | | | | | |
| | | 9700 | | | | | | | | | |
| | | 9800 | | | | | | | | | |
| | | 9900 | | | | | | | | | |
| | | 10000 | | | | | | | | | |

*The Table
of Primes
Continued.*

| | | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|--|------|------|------|------|------|------|------|------|------|------|
| | | | | | | | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 |
| | | | | | | | 13 | 18 | 4 | 9 | 14 | 19 | 5 | 10 | 15 | 2 |
| | | | | | | | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 | 2600 | 2700 | 2800 | 2900 |
| 1 | 20 | 39 | 58 | 77 | 96 | | 14 | 19 | 5 | 10 | 15 | 1 | 6 | 11 | 16 | 2 |
| 2 | 21 | 40 | 59 | 78 | 97 | | 15 | 1 | 6 | 11 | 16 | 2 | 7 | 12 | 17 | 3 |
| 3 | 22 | 41 | 60 | 79 | 98 | | 16 | 2 | 7 | 12 | 17 | 3 | 8 | 13 | 18 | 4 |
| 4 | 23 | 42 | 61 | 80 | 99 | | 17 | 3 | 8 | 13 | 18 | 4 | 9 | 14 | 19 | 5 |
| 5 | 24 | 43 | 62 | 81 | | | 18 | 4 | 9 | 14 | 19 | 5 | 10 | 15 | 1 | 6 |
| 6 | 25 | 44 | 63 | 82 | | | 19 | 5 | 10 | 15 | 1 | 6 | 11 | 16 | 2 | 7 |
| 7 | 26 | 45 | 64 | 83 | | | 1 | 6 | 11 | 16 | 2 | 7 | 12 | 17 | 3 | 8 |
| 8 | 27 | 46 | 65 | 84 | | | 2 | 7 | 12 | 17 | 3 | 8 | 13 | 18 | 4 | 9 |
| 9 | 28 | 47 | 66 | 85 | | | 3 | 8 | 13 | 18 | 4 | 9 | 14 | 19 | 5 | 10 |
| 10 | 29 | 48 | 67 | 86 | | | 4 | 9 | 14 | 19 | 5 | 10 | 15 | 1 | 6 | 11 |
| 11 | 30 | 49 | 68 | 87 | | | 5 | 10 | 15 | 1 | 6 | 11 | 16 | 2 | 7 | 12 |
| 12 | 31 | 50 | 69 | 88 | | | 6 | 11 | 16 | 2 | 7 | 12 | 17 | 3 | 8 | 13 |
| 13 | 32 | 51 | 70 | 89 | | | 7 | 12 | 17 | 3 | 8 | 13 | 18 | 4 | 9 | 14 |
| 14 | 33 | 52 | 71 | 90 | | | 8 | 13 | 18 | 4 | 9 | 14 | 19 | 5 | 10 | 15 |
| 15 | 34 | 53 | 72 | 91 | | | 9 | 14 | 19 | 5 | 10 | 15 | 1 | 6 | 11 | 16 |
| 16 | 35 | 54 | 73 | 92 | | | 10 | 15 | 1 | 6 | 11 | 16 | 2 | 7 | 12 | 17 |
| 17 | 36 | 55 | 74 | 93 | | | 11 | 16 | 2 | 7 | 12 | 17 | 3 | 8 | 13 | 18 |
| 18 | 37 | 56 | 75 | 94 | | | 12 | 17 | 3 | 8 | 13 | 18 | 4 | 9 | 14 | 19 |
| 19 | 38 | 57 | 76 | 95 | | | 13 | 18 | 4 | 9 | 14 | 19 | 5 | 10 | 15 | 1 |



The Sun's Right Ascension that day is, 1 hour 21 min. the time from Noon is 15 hours; which added to the Sun's Right Ascension, makes 16 hours 21 min. the nearest in the Table is the *Scorpion's Heart*, whose Right Ascension is 16 hours 9 min. and comes to the Meridian 12 min. after 4; and *Hercules's Head*, whose Right Ascension is 16 h. 50 m. from which take 16 h. 21 m. and there rests 29 m. after 4 of the Clock, which is the time of *Hercules's Head* coming upon the Meridian. Note, That 16 hours from Noon, is 4 of the Clock next Morning.

The Use of the Table for finding the Prime or Golden Number for ever.

The even hundred, is to be sought for at the top of the Table, the odd years on the side, and when the year sought consist of hundreds and odd years, then the Angle of Meeting, shews the *Prime* or *Golden Number* for the year sought.

Example.

To find the *Prime* or *Golden Number* for the year 1600, which number look for at the top of the Table, and just under you will find 5, which is the *Prime* for that year.

Example 2.

To find the *Prime* or *Golden Number* for the year 1697, seek for 1600 on the top of the Table, and the odd years on the side, and in the common Angle of Meeting you will find 7, the *Prime* for that year.

The

The Use of the Table that sheweth the Dominical Letter from the first Year of our Lord, to the Year +100, and may be continued for ever.

The even hundreds are to be found on the top of the Table ; having their *Dominical Letters* next under them (and are all Leap Years) as 700, 1400, 2100, 2800, and 3500, all which Years have D C for their *Dominical Letters*.

The odd Years above the hundreds, are to be found on the side. as 12, 40, 68, and 96 have C B for their *Dominical Letters*,

To find the Dominical to those Years that are Hundreds and odd Years.

You must seek the even hundreds on the top, and the odd Years by the side ; and in the Angle of Meeting you will find the *Dominical Letter* or *Letters* answering to such Years.

Example.

I demand the *Dominical Letter* or *Letters* for the Year 1708, seek 1700 on the top of the Table, and 8 on the side, and in the Angle of Meeting you will find D C to be the *Dominical Letters* for that Year ; the first of which serves from the beginning of the Year to the 25th of February (which is St. Matthias's day) C the Letter to the end of the Year.

The



A Table shewing the Dominical Letter
from the first year of our Lord to the
year 4100 & may be continued for ever

P^r S^r S.
Moreland

| | | | | 700 | 100 | 200 | 300 | 400 | 500 | 600 |
|----|----|----|----|------|------|------|------|------|------|------|
| | | | | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 |
| | | | | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
| | | | | 2100 | 2200 | 2300 | 2400 | 2500 | 2600 | 2700 |
| | | | | 2800 | 2900 | 3000 | 3100 | 3200 | 3300 | 3400 |
| | | | | 3500 | 3600 | 3700 | 3800 | 3900 | 4000 | 4100 |
| 0 | 28 | 56 | 84 | DC | ED | FE | GF | AG | BA | CB |
| 1 | 29 | 57 | 85 | B | C | D | E | F | G | A |
| 2 | 30 | 58 | 86 | A | B | C | D | E | F | G |
| 3 | 31 | 59 | 87 | G | A | B | C | D | E | F |
| 4 | 32 | 60 | 88 | FE | GF | AG | BA | CB | DC | ED |
| 5 | 33 | 61 | 89 | D | E | F | G | A | B | C |
| 6 | 34 | 62 | 90 | C | D | E | F | G | A | B |
| 7 | 35 | 63 | 91 | B | C | D | E | F | G | A |
| 8 | 36 | 64 | 92 | AG | BA | CB | DC | ED | FE | GF |
| 9 | 37 | 65 | 93 | F | G | A | B | C | D | E |
| 10 | 38 | 66 | 94 | E | F | G | A | B | C | D |
| 11 | 39 | 67 | 95 | D | E | F | G | A | B | C |
| 12 | 40 | 68 | 96 | CB | DC | ED | FE | GF | AG | BA |
| 13 | 41 | 69 | 97 | A | B | C | D | E | F | G |
| 14 | 42 | 70 | 98 | G | A | B | C | D | E | F |
| 15 | 43 | 71 | 99 | F | G | A | B | C | D | E |
| 16 | 44 | 72 | | ED | FE | GF | AG | BA | CB | DC |
| 17 | 45 | 73 | | C | D | E | F | G | A | B |
| 18 | 46 | 74 | | B | C | D | E | F | G | A |
| 19 | 47 | 75 | | A | B | C | D | E | F | G |
| 20 | 48 | 76 | | GF | AG | BA | CB | DC | ED | FE |
| 21 | 49 | 77 | | E | F | G | A | B | C | D |
| 22 | 50 | 78 | | D | E | F | G | A | B | C |
| 23 | 51 | 79 | | C | D | E | F | G | A | B |
| 24 | 52 | 80 | | BA | CB | DC | ED | FE | GF | AG |
| 25 | 53 | 81 | | G | A | B | C | D | E | F |
| 26 | 54 | 82 | | F | G | A | B | C | D | E |
| 27 | 55 | 83 | | E | F | G | A | B | C | D |

A Table
Shewing by the help of y^e Dominical
Letter what day of the week any
Month of the year begins for ever

| | A | B | C | D | E | F | G |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Ian ³¹ | Sund | Satur | Fryd | Thur | Wedn | Tues | Mun |
| Feb ²⁸ | Wedn | Tues | Mun | Sund | Satur | Fryd | Thur |
| Mar ³¹ | Wedn | Tues | Mun | Sund | Satur | Fryd | Thur |
| Apr ³⁰ | Satur | Fryd | Thur | Wedn | Tues | Mun | Sund |
| May ³¹ | Mun | Sund | Satur | Fryd | Thur | Wedn | Tues |
| Iun ³⁰ | Thur | Wedn | Tues | Mun | Sund | Satur | Fryd |
| Iuly ³¹ | Satur | Fryd | Thur | Wedn | Tues | Mun | Sund |
| Aug ³¹ | Tues | Mun | Sund | Satur | Fryd | Thur | Wedn |
| Sep ³⁰ | Fryd | Thur | Wedn | Tues | Mun | Sund | Satur |
| Oct ³¹ | Sund | Satur | Fryd | Thur | Wedn | Tues | Mun |
| Nov ³⁰ | Wedn | Tues | Mun | Sund | Satur | Fryd | Thur |
| Dec ³¹ | Fryd | Thur | Wedn | Tues | Mun | Sund | Satur |



The Use of the Table, by the help of the Dominical Letter, to know what Day of the Week any Month of the Year begins for ever.

Having by the last Table found the *Dominical Letter* for any Year you desire, this Table will shew you what Day of the Week each Month begins withal, every Day throughout the Year.

The *Dominical Letters* are placed at the top of the Table.

Therefore you must look the *Dominical Letter* or *Letters* on the top of the Table, then seek the Month you desire in the first Column, and in the Angle of Meeting you will find the Letter or Letters for the Year proposed.

Example.

If it be required to know what Week-day begins the Month of *May*, 1709, the *Dominical Letter* for the Year is B. Then under B in this Table, and right against *May* in the Angle of Meeting, you will find *Sunday* to be the first day of *May*.

And in the Year 1712, which is Leap Year, you will find the *Dominical Letters* to be F E, and it is then required what Day of the Week *February* begins withal: you must therefore look in the Column under F, the first of the *Dominical Letters*, and in the Angle of Meeting you will find *Friday*, which begins *February* that Year: And note, that this first Letter serves only till the 25th of *February*; and the other Letter E serves all the Year after, so by the former Rule, you will find that *May* begins on a *Thursday*, looking under E right against the Month of *May*.

E

The

The Use of the Table, that shews the seven Varieties of the Days of the Week for finding the Day of the Month by the last Table.

Having by the two former Tables found what Day of the Week the Month begins; this Table readily shews the Day of the Month.

Example.

The first of *May*, 1712, falls on *Thursday*, and I would know what Day of the Month the third *Thursday* is in that Month? I seek for the square in this Table that begins with *Thursday*, and against it I find 1, 8, 15, 22, 29. which are all *Thursdays* in that month; the third answereth the Question, being the 15th day.

The excellency of these Tables may be illustrated by these two following Examples.

Example 1.

Suppose such a Man was born, or such an Action done, or such a Letter was written the 10th of *May*, 1610, and it is demanded what Day of the Week it was? First, I find the *Dominical Letter* to be G, and by one of the Tables I find that *May* begun that Year on the *Tuesday*, and by this last Table, that the 10th Day was on *Thursday* that Month; and so may any other Day of a Week of any other Month of any other Year past or to come be known.

Example 2.

Suppose such a Man was born, or such an Action done, or such a Letter written upon the 26th of *December*, 1632, having found by the foregoing Directions, that *December* that Year began on a *Saturday*, I find that the 26th Day was on *Thursday*; the *Dominical Letters* for that Year being A G.

The

The Seven
Varieties of the
Days of y^e Week
for finding the
day of the Month

| | | | | | | | | | | | |
|------------|---|----|----|----|----|-----------|---|----|----|----|----|
| | | | | | | Wedn | 1 | 8 | 15 | 22 | 29 |
| | | | | | | Thursdays | 2 | 9 | 16 | 23 | 30 |
| | | | | | | Frydays | 3 | 10 | 17 | 24 | 31 |
| | | | | | | Saturday | 4 | 11 | 18 | 25 | |
| | | | | | | Sundays | 5 | 12 | 19 | 26 | |
| | | | | | | Mundays | 6 | 13 | 20 | 27 | |
| | | | | | | Tuesdays | 7 | 14 | 21 | 28 | |
| Sund: | 1 | 8 | 15 | 22 | 29 | Thursd | 1 | 8 | 15 | 22 | 29 |
| Mundays | 2 | 9 | 16 | 23 | 30 | Frydays | 2 | 9 | 16 | 23 | 30 |
| Tuesdays | 3 | 10 | 17 | 24 | 31 | Satur-day | 3 | 10 | 17 | 24 | 31 |
| Wednesda | 4 | 11 | 18 | 25 | | Sundays | 4 | 11 | 18 | 25 | |
| Thursdays | 5 | 12 | 19 | 26 | | Mundays | 5 | 12 | 19 | 26 | |
| Frydays | 6 | 13 | 20 | 27 | | Tuesdays | 6 | 13 | 20 | 27 | |
| Saturday | 7 | 14 | 21 | 28 | | Wednesday | 7 | 14 | 21 | 28 | |
| Mund: | 1 | 8 | 15 | 22 | 29 | Fryd: | 1 | 8 | 15 | 22 | 29 |
| Tuesdays | 2 | 9 | 16 | 23 | 30 | Saturday | 2 | 9 | 16 | 23 | 30 |
| Wednesdays | 3 | 10 | 17 | 24 | 31 | Sundays | 3 | 10 | 17 | 24 | 31 |
| Thursdays | 4 | 11 | 18 | 25 | | Mundays | 4 | 11 | 18 | 25 | |
| Frydays | 5 | 12 | 19 | 26 | | Tuesdays | 5 | 12 | 19 | 26 | |
| Saturday | 6 | 13 | 20 | 27 | | Wednesday | 6 | 13 | 20 | 27 | |
| Sundays | 7 | 14 | 21 | 28 | | Thursday | 7 | 14 | 21 | 28 | |
| Tuesd | 1 | 8 | 15 | 22 | 29 | Satur: | 1 | 8 | 15 | 22 | 29 |
| Wednesdays | 2 | 9 | 16 | 23 | 30 | Sundays | 2 | 9 | 16 | 23 | 30 |
| Thursday | 3 | 10 | 17 | 24 | 31 | Mundays | 3 | 10 | 17 | 24 | 31 |
| Frydays | 4 | 11 | 18 | 25 | | Tuesdays | 4 | 11 | 18 | 25 | |
| Saturday | 5 | 12 | 19 | 26 | | Wednesday | 5 | 12 | 19 | 26 | |
| Sundays | 6 | 13 | 20 | 27 | | Thursday | 6 | 13 | 20 | 27 | |
| Mundays | 7 | 14 | 21 | 28 | | Frydays | 7 | 14 | 21 | 28 | |

| | | D: N: Mo | A Table for the ready finding n And what part of | | | | | | | | | | | | | | | |
|------------|----|----------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Fehr: Nov: | 3 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 |
| March | | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 |
| | 14 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 |
| Decemb: | 6 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 |
| | | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 |
| Aprill | 17 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 |
| | 9 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 |
| May | I | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 |
| | | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 |
| | 12 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 |
| | 4 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 |
| June | | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 |
| | 15 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 |
| July | 7 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 |
| | | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 |
| | 18 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 |
| | 10 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I |
| August | 2 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 |
| | | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 |
| | 13 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 | 4 |
| | 5 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 | 5 |
| Septemb | | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 | 6 |
| | 16 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 | 7 |
| Ian: Oct | 8 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 | 8 |
| | | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 | 9 |
| | 19 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II | 10 |
| | 11 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | II |

finding what Sign the Moon is in or shall be for ever.
 t part of Mans body every Sign doth govern.

| | | | | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------------------|
| 8 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | V | Head & Face |
| 9 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | | |
| 10 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 8 | Neck & Throat |
| 1 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | | |
| 2 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | II | Arms/shoulders and hands |
| 3 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | | |
| 4 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 69 | Brest and Stomack |
| 5 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | | |
| 6 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 8 | Heart and Back |
| 7 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | | |
| 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | | m | Bowels and Belly |
| I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | | | |
| 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | | = | Reyns and Loyns |
| 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | | | |
| 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | | m | Secrets |
| 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | |
| 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | | ↗ | Thighs |
| 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | | | |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | | VS | Knees |
| 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | 21 | | | |
| 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | 22 | | W | Leggs |
| 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | 23 | | | |
| 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | 24 | | H | Feet |
| 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | 25 | | | |
| 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | 26 | | | |
| 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | 27 | | | |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | I | | | |



The Use of Table for finding what Sign the Moon is in, and what part of Man's Body every Sign doth Govern.

Seek the name of the month in which the Question is required (in the first Column of the Margin on the left hand) then guiding your Eye (in the same row) to the Figure (1) in the Table, and in that Column find the Day of the month given, which you will find either above or below the (1.) 2d. Having found the day of the month in that Column, guide your Eye back to the Number in the left hand Margin, under the Title (day of the month) which Number bear in your Memory. 3d. See for the *Prime* or *Golden Number* (for the Year given) in the Column of the left hand margin under the Title *Golden Number*, and from that guide your Eye to (1) in the Table, and in that Column seek for your Number that you bore in your memory, which you will find either upwards or downwards, (in the same Column) and against it in the margin on the right hand (among the Signs) you will find what sign the *Moon* is in, and in what part of the Body it Governs.

Example.

The 12th day of May, 1707, I desire to know what Sign the *Moon* is in, &c. you will find in the Table of *Prime*, that the *Prime* or *Golden Number* is 17, and find *May* in the margin on the left hand, then direct your Eye from thence (in the same row) to (1) in the Table, and in that Column seek the day of the month (which you will find under (1) in the Table;) from thence bring your Eye back to the left hand margin to the Column of days of the month, which you will find 19, which Number bear in your memo-

ry. Then in the Column under G. Numb. (in the left hand margin) seek for the *Prime* for that Year, which is 17, then guide your Eye to (1) in the Table, and in that Column seek for 12, the day of the month (which you will find beneath.) And right against that (in the same row in the right hand margin) you will find the *Moon* to be in ∞ , which governs the Legs, which is the concern of the Question.

The Use of the Table of the Moveable Feasts.

Having found by the foregoing Tables, the *Prime* and *Dominical Letter*; seek for the said *Prime* in the square in the second Column, and in a strait line to the right hand under the Title (from *Christmas* to *Shrove Sunday*) you have the weeks and days from *Christmas* to *Shrove-Sunday*, and under *Shrove-Sunday* the day of the month *Shrove-Sunday* falls on; and in the rest of the Columns you will find what day of the month *Easter*, *Rogation-Sunday*, *Ascension-day*, *Whit-Sunday*, *Trinity-Sunday*, *Advent-Sunday* falls on.

One Example will make it plain.

In the Year 1709, the *Dominical Letter* is B, and the *Prime* or *Golden Number* 19. Which *Dominical Letter* seek in the first Column, and in the second Column, in the square adjoining thereto, seek the *Prime* 19, which you will find in the lowest row of the square, and in the next Column you will find 10 weeks and one day between *Christmas* and *Shrove-Sunday*, and that *Shrove Sunday* falls on the 8th day of March, and *Easter-day* to be the 24th day of April, *Rogation Sunday* to be on the 29th of May, *Ascension-day* to be on the 2d of June, *Whit-Sunday* to be on the 12th of June, *Trinity-Sunday* to be on the 19th of June, and *Advent Sunday* to be on the 27th of November.

The

Of Arithmetike the
Notation w.^{ch} teacheth the true
Numeration w.^{ch} teacheth of Nu
another required, and consisteth in
of Numbers, comprising these 6 R^{es}
Multiplication, Division, Reduction
of Roots. Arithmetike is either
Simple is that which considereth
Comparative compareth them together
Ev^{er}ie number, whether
by these, or some of those is on the
and is either Digit, Arith
1.2.3. 4. 5.6.7.8.9. 10.20

le there is two parts viz.
true value of each Number, &
of Numbers given to finde out
th in y^e Composition & Dissolution
6 Rules, viz. Addition Subtraction
duction, Progression and Extraction

is either Simple or Comparativd.
meth the simple nature of Numbers,
together in respect of quantity or quality
then Integer or fraction is expressed

Charactors 1. 2. 3. 4. 5. 6. 7. 8. 9. 0.

Article, or
10. 20. 30 &c.

Compound
1664. 4157.

Compendiums of Arithmetick

A Table of Numeration

| Octil Noms. | Septil Noms. | Sextil Noms. | Quintil Noms. | Quadril Noms. | Triplum | Duplum | M. | T. | U. |
|----------------|-----------------|-----------------|------------------|------------------|---------|--------|-----|-----|-----|
| 345 | 678 | 012 | 345 | 123 | 456 | 780 | 236 | 897 | 456 |

A Table of Addition & Subtraction.

| | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |

Example of Addition. 6 in the left hand Column, and 7 in the top, gives 13 in the Common angle, which is the answer &c. Example of Subtraction 6 in the side, from 13 in the common angle, leaves 7 in $\frac{1}{2}$ top for answer.

| Addition | Otherways | Subtraction |
|-----------------------------------|-------------|---------------------------------|
| 9 5 8 8 8 | a b c d e | 7 3 0 5 8 2 |
| 0 8 6 9 7 | 9 5 8 8 8 | 1 5 1 3 6 8 |
| 8 7 9 9 8 | 9 8 6 9 7 | 1 1 1 |
| 0 7 5 9 0 | 8 7 9 9 8 | 5 7 9 2 1 4 |
| 2 7 8 5 3 | 0 7 5 9 0 | Work thus, 8 from 2 |
| 2 2 3 2 | c 2 3 | cannot therefore bor |
| 5 0 1 7 3 | d 3 5 | row ten & place, 1, |
| 8 + 7 + 8 = 23 | e 2 8 | under $\frac{1}{2}$ next row of |
| Work 8 + 7 = 15, 15 + 8 = 23. bor | b 2 7 | figures, saying 8 from |
| under 5 there is 1 under 7 | 13 2 | 15 refts 7; then say |
| 15 + 8 = 23, bor 1, 15 + 8 = 23 | 3 5 0 1 7 3 | 1, & 8 is 7, from 8 reft |
| 15 + 8 = 23, bor 1, 15 + 8 = 23 | | 1, & so on as before |

Compendiums of Arithmetick

Multiplication

| A Multiplication Table | | | | | | | | | | An Example | |
|------------------------|----|----|----|----|----|----|----|----|--|------------|---------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 3421 | Multiplicand |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | | 68 | Multiplicator |
| 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | | 168 | |
| 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | | 326 | |
| 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | | 242 | |
| 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | | 21 | |
| 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | | 184 | |
| 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | | 232628 | Product |
| 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | | | |

Proof: cut off 3 of 3. Multiplied
tenth & Multiplier till the remainder
is 1. Multiplier 8 one half for the
other cutting out 6. 3 and for the
remainder on the top of 8 then cut
off 3 out of 8 Prod. 6 for 12 or better
to if 8 remain then the right else not

Division

| A Second way | | A Third way | |
|---|--|--|--|
| Dividend 3421 | 1721 (1624 83 (123 | 28773 | |
| 334 | 1 Prod 1721 | 54270 333 (140 | |
| 31777 | 3038 | 54280 | |
| 3000 | 2 Prod 2042 | 210 | |
| 01317 | 3063 | | |
| 21002 | 3 Prod 3063 | | |
| 00315 | Rem 0000 | | |
| Proof: All the several Subtractions to the last Remainder, & if the result be the same with the Di- vidend it is right else not | Proof by addition of 3 several products & the divisor, & the rema. if not be it = to the Di- vidend it is right else not | Proof is by addition also for the figures be- tween the 2 Lines & the remainder is = to the Dividend | |
| 334 | 1 Prod 1721 | 54280 | |
| 3000 | 2 Prod 2042 | 210 | |
| 1002 | 3 Prod 3063 | 25880 | |
| 315 | Rem 0000 | Rem 273 | |
| 64777 dividend | Divid 102483 | Dividend 28553 | |

The best & Principal method of Division

| 1 Example | 2 Example |
|-------------|-----------------|
| 9) 936 (104 | 184) 36304 (306 |
| 9 | 392 |
| 036 | 2104 |
| 36 | 1104 |
| 0 | 0 |

Geometricall Definitions of of Lines

A Point

*Right
Line*

*A Curved
Line*

*A Crooked
Line*

*Paralell
Lines*

*Spirall
Line*

*Circuler
Paralells*

of Angles

*Right
Angle*

*Obtuse
Angle*

*Acute
Angle*

of Triangles

*Right angled
Triangle*

Ambligone

*Oxigone**

Equilaterall

Scalena

Isofceles

of Poligons

3

4

5

6

Trigone Tetragone Pentagone Exagone

Lines Angles Triangles & Bodyes.

Poligons



Eptagone



Octagone



Encagone



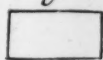
Decagone



Endecadone



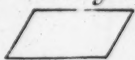
Dodecagone



Oblong



Rhambos



Rhumboides



Trapeza



Piramide



Pythagoras Δ

of Bodyes



Tetrahedron



Octohedron



Cube



Dodechahedron



Icosahedron



Cone



Sphere

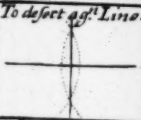
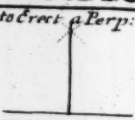


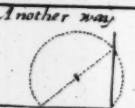
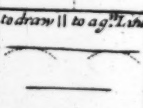
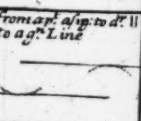
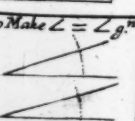
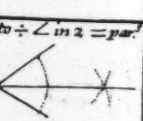

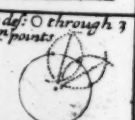
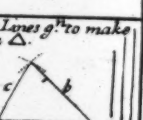


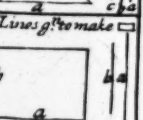


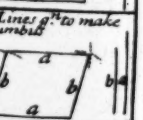





Prisme

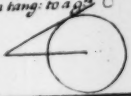


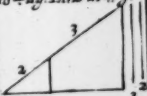
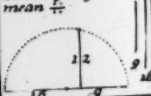




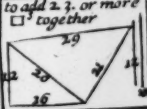


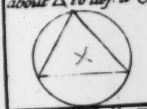

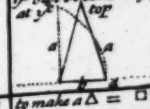








Cylender

Geometrical

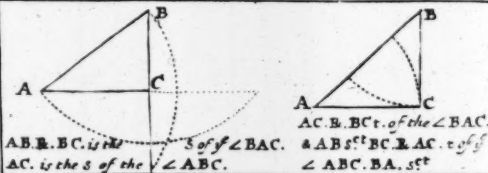
| | | |
|--|---|--|
| <p>To defect a g.ⁿ Line.</p>  | <p>to Erect a Perp:</p>  | <p>to Let fall a Perp:</p>  |
| <p>to Erect a \perp on end of a g.ⁿ Line</p>  | <p>Another way</p>  | <p>to draw \parallel to a g.ⁿ Line</p>  |
| <p>from a p.^t a g.ⁿ to dr. \parallel to a g.ⁿ Line</p>  | <p>to Make $\angle = \angle$ g.ⁿ</p>  | <p>to $\div \angle$ in 2 = par.</p>  |
| <p>to \div a Line into parts</p>  | <p>to def. \circ through 3 g.ⁿ points</p>  | <p>3 Lines g.ⁿ to make a Δ.</p>  |
| <p>2 C.^t g.ⁿ to make a Δ</p>  | <p>to make a Geom. \square</p>  | <p>2 Lines g.ⁿ to make \square</p>  |
| <p>3 C.^t g.ⁿ to make Δ</p>  | <p>4 C.^t g.ⁿ to make a Rhombus</p>  | <p>3 Lines g.ⁿ to make Rhombus</p>  |
| <p>to make a Pol: 5: C.</p>  | <p>to make a Hexagon</p>  | <p>to make an Octagon</p>  |

Rudiments

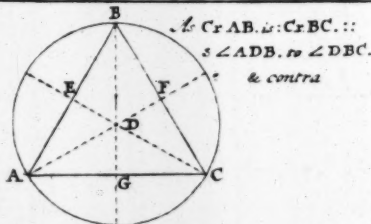
| | | |
|---|---|---|
| <p>from a^r to draw a tang: to a gⁿ ○</p>  | <p>to find a 3rd \div</p>  | <p>3 Lines gⁿ to find a 4th</p>  |
| <p>to \div a gⁿ Line in \div gⁿ</p>  | <p>2 Lines gⁿ to find a mean \div</p>  | <p>to \div a L. gⁿ in extrem es mean \div</p>  |
| <p>to Reduce \square into a Geom. \square</p>  | <p>to Reduce Δ into \square</p>  | <p>to Reduce a Trapez^o into a Δ</p>  |
| <p>to add 2, 3, or more \square together</p>  | <p>in a \square gⁿ to def: a \square</p>  | <p>in \square gⁿ to Inscrib \square</p>  |
| <p>about Δ to def: a \square</p>  | <p>in Δ gⁿ to Inscrib \square</p>  | <p>to make Δ each \angle at it's base be doub: to yth at yth top</p>  |
| <p>in Δ to Inscrib \square</p>  | <p>to make a Rhombus \equiv to a gⁿ Δ</p>  | <p>to make a $\Delta \equiv \square$</p>  |
| <p>to Def: an Oval on a gⁿ Line</p>  | <p>the 2 Diam: gⁿ to Def: an Oval</p>  | <p>to find yth Center of an Oval</p>  |

Demonstrations of the 4 Axiomes of plane Trigonometrie.

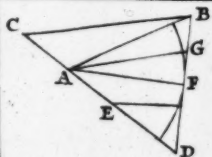
Axiome 1.



Axiome 2.

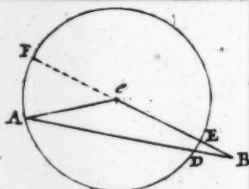


Axiome 3.



$As Z Crs. AB \& AC$ is
 $CD :: \times ED :: \angle BAF$.
 nch is FB to FG .

Axiome 4.



$As base AB :: Z crs AC \& BC$
 nch is $BE :: \times EB$ to BD .

A Synopsis of Plain Trigonometry.

of Right Angled Triangles of Oblique Triangles

Axiome 1 of right angled Triangles.

In all plain & any of \angle Cr^t may be made R & \angle of other Cr^t will be S^t & S^t & R^t Proportion of Cr. put for R hath to R of same Proportion hath of other Cr^t to \angle S^t & S^t by them represented.

Axiome 2 of Oblique Triangles.

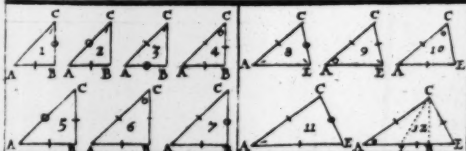
In all plain & \angle Cr^t are in Proportion one to another as \angle S^t of \angle S^t & S^t & S^t & S^t by them represented.

Axiome 3.

In all plain & as \angle Z of 2 Cr^t X to \angle Z of \angle S^t & S^t to \angle S^t of \angle X of either of them above or under \angle Z.

Axiome 4.

In all plain & as \angle base is in Proportion Z of \angle other Cr^t :: X of the Cr^t :: X of \angle segments of \angle base.

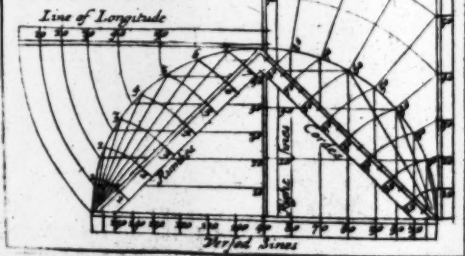


| | Date | Req | Proportional | Avi | | Date | Req | Proportional | Avi |
|---|---------------------|-----|----------------------------------|-----|----|---------------------------------|--------------|---|--------------|
| 1 | AB | EC | CB R tA :: AB:CB | J | 8 | AE or AC | EC | SE SA :: AC:EC | Z |
| 2 | | | AC sC.B :: AB:AC | J | 9 | AC or EC | A | AC:EC :: AE:SA | Z |
| 3 | AC | EC | EC sC :: AC:AB | J | 10 | AE Long or AC Short | E or C | (AE+AC.AE - AC::E::E+C E+D -E is E | 3 |
| 4 | AB | C | CBAB :: E::C | J | | | | | |
| 5 | CB | AC | (CB.AB :: E::C) | J | | | | | |
| 6 | AB | C | ACAB :: E::C | J | 11 | AE or AC | EC | by \angle left case find thereby \angle C | 2 or 3 |
| 7 | AC | BC | EC tA :: AB:BC | J | | | | | |
| | or for this last | | AC AC + : CB :: CB:- AB AB | | 12 | AE Long or EC Short | A | AEAC+EC :: AC-E CA::XAEAB ES:AE+or-EC is AB the by \angle 6th AC.AB :: EC.A or EC.EB :: E or E | 4 |

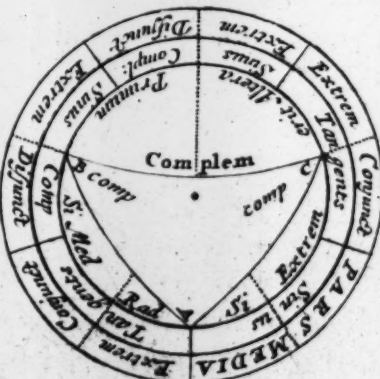
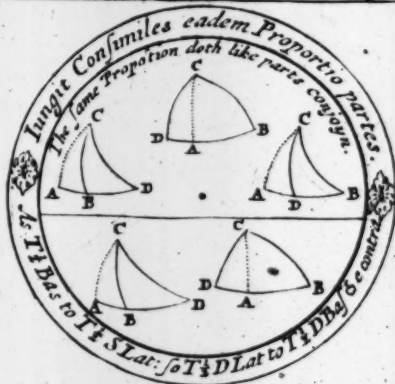
Symbols used in Trigonometry

| | |
|------------|-----------------|
| Radius | R |
| Equall | = |
| Le's | — |
| More | + |
| a Side | cr |
| Sides | crs |
| an. Angle | \angle |
| Angles | $\angle \angle$ |
| Sum | Σ |
| Dif | × |
| Sine | S |
| Sine Comp | Sc |
| Comp Arith | co: ar |
| Tangent | t |
| Tang: Comp | tc |
| Secant | sec |
| Degree | o |
| Minut | ' |
| Root | √ |
| As | ∴ |
| See is | ∴ |

A Fundamental Projection
of the Lines of Sines, Tan-
gents, Secants, Chords,
Rhumbs. &c.



The 5 Circular parts of Δ gles



A Synopsis of Fundamental

The S. of \angle middle $p^t + B$ = (or reciprocally proportional) nt of \angle of \angle middle p^t or either of extremes conjunct be noted nt as comp^{nt} in the instead of \angle S. or t you must use \angle Cs. or ct . and ins^{nt} disjuncts instead of

Of right angled Triangles

Mid^{nt} \angle s. extra disjunct

Equal^{nt} Univer. Analogism

Mid^{nt} \angle s. extra conjunct

Equal^{nt} Univer. Analogism

$$\left. \begin{array}{l} s BC + B = s AC + s A \\ s A + B = cs CB + s C \\ cs AC + B = cs BC + cs AB \end{array} \right\} \left. \begin{array}{l} s AC + B = s BC + s A + ct A + ct B \\ cs A + B = cs AB + ct AC \\ cs BC + B = cs AC + ct A + ct B \end{array} \right\} \left. \begin{array}{l} ct CB = s AC : ct A \\ ct AB = cs A : ct AC \\ ct AB = s AB : ct B \end{array} \right\}$$



| 1 | Dat | Reg | Operation or Equality |
|----|-----|-----|---------------------------------|
| 1 | AB | CB | $s AB + ct A = t CB$ |
| 2 | A | C | $cs AB + s A = cs C$ |
| 3 | | AC | $cs A + t AB = t AC$ |
| 4 | CB | C | co. Ar: $cs CB + cs A = s C$ |
| 5 | A | AC | co. Ar: $s A + s CB = s AC$ |
| 6 | | AB | $ct A + t CB = s AB$ |
| 7 | AC | AB | $cs A + t AC = t AB$ |
| 8 | A | CB | $s AC + s A = s CB$ |
| 9 | | C | $cs AC + ct A = ct C$ |
| 10 | AB | AC | $cs CB + cs AB = cs AC$ |
| 11 | CB | A | $s AB + t CB = ct A$ |
| 12 | AB | CB | co. Ar: $cs AB + cs AC = cs CB$ |
| 13 | AC | A | $t AB + ct AC = cs A$ |
| 14 | CB | A | co. Ar: $s AC + s CB = s A$ |
| 15 | A | CB | co. Ar: $s C + cs A = cs CB$ |
| 16 | C | AC | $ct C + ct A = cs AC$ |



Spherical Trigonometry

Axiom.

extremes conjunct and \angle cs: of \angle extremes disjunct. Note if the circular p^{ts} of Δ (that is either of Hypothenusa or either of \angle focus \angle of Sc. of S. of such an extreme disjunct as in this table

Of Quadrantal triangles

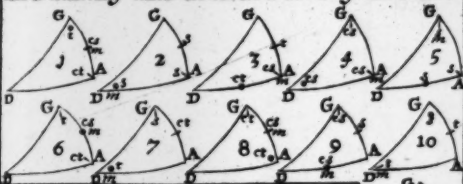
Mult^y 2 extremes conjunct

Mult^y 2 extremes disjunct

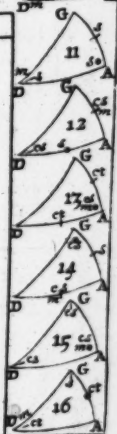
Equal^y Univer. Analogisms

Equal^y Univer. Analogisms

$$\left. \begin{aligned} sG + B &= ctAG + tD \\ csAG + B &= ctA + tG \\ csA + B &= ctGA + ctAD \end{aligned} \right\} \begin{aligned} ctAO + B &= ctG + tD \\ ctA + B &= csAG + tG \\ ctGA + B &= ctA + ctAD \end{aligned} \left\} \begin{aligned} sG + B &= sA + sAD \\ ctAG + B &= ctA + sAD \\ ctGA + B &= ctA + ctAD \end{aligned} \right\} \begin{aligned} sA + B &= sG + sAD \\ ctA + B &= ctAG + sAD \\ ctGA + B &= ctAG + ctAD \end{aligned}$$



| No | Dat | Req | Operation or Equality |
|----|-----|-----|---------------------------|
| 1 | AG | G | $csAG + ctA = tG$ |
| 2 | A | D | $sAG + sA = sD$ |
| 3 | | AD | $csA + tAG = ctAD$ |
| 4 | A | D | co.fr: $csG + csA = csD$ |
| 5 | G | AD | co.fr: $sA + sG = sAD$ |
| 6 | | AG | $ctA + tG = csAG$ |
| 7 | AG | D | $sG + ctAG = tD$ |
| 8 | G | A | $csAG + ctG = ctA$ |
| 9 | | AD | $sAG + csG = csAD$ |
| 10 | AG | G | $tAG + tD = sG$ |
| 11 | D | A | co.fr: $sAG + sD = sA$ |
| 12 | | AD | co.fr: $csD + csAG = sAD$ |
| 13 | AG | A | $ctAG + ctAD = csA$ |
| 14 | AD | G | co.fr: $sAG + csAD = csG$ |
| 15 | D | A | $csD + csG = csA$ |
| 16 | G | AG | $sG + ctD = ctAG$ |



Of Oblique Triangles

1 Axiom

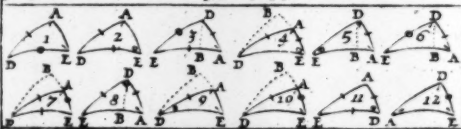
In all Spherical & $\frac{1}{2}$ S^d of $\frac{1}{2}$ Cr^d are in such P^{ro}portion to each other as are $\frac{1}{2}$ S^d of their $\frac{1}{2}$ Cr^d

2 Axiom

An Oblique Spherical $\frac{1}{2}$ being parted into 2 & $\frac{1}{2}$ middle part in $\frac{1}{2}$ one is in P^{ro}portion to $\frac{1}{2}$ middle p^{ar}t in $\frac{1}{2}$ other and $\frac{1}{2}$ extrem in $\frac{1}{2}$ one to $\frac{1}{2}$ extrem in $\frac{1}{2}$ other

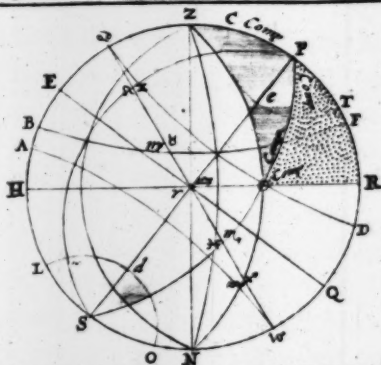
3 Axiom

As $\frac{1}{2}$ rect L of $\frac{1}{2}$ S^d of $\frac{1}{2}$ containing Cr^d \square of B :: rect L of $\frac{1}{2}$ S^d of $\frac{1}{2}$ of $\frac{1}{2}$ fore^{sa}id Z and remain^{er} \square of $\frac{1}{2}$ S^d of $\frac{1}{2}$ contained Z



| C ^{ase} | D ^{at^a} | R ^{ec^o} | P ^{ro} portionality |
|------------------|-------------------------------|-----------------------------|--|
| 1 | A E AD AD A ED | ED | $\frac{1}{2} E. : \frac{1}{2} AD :: \frac{1}{2} A : \frac{1}{2} ED$ |
| 2 | A E AD A ED | E | $\frac{1}{2} ED : \frac{1}{2} A :: \frac{1}{2} AD : \frac{1}{2} E$ |
| 3 | AD A AE | ED | $\frac{1}{2} AD : \frac{1}{2} AE :: \frac{1}{2} AD : \frac{1}{2} AE$ Z or Rem ^a . AB & AE is EB ca. AB. ca. EB :: ca. AD : ca. ED E. ca. AD : ca. AD : ca. AB |
| 4 | AD A AE | E | $\frac{1}{2} AD : \frac{1}{2} AE :: \frac{1}{2} AD : \frac{1}{2} AE$ Z or Rem ^a . AB & AE is EB ca. EB. ca. AD : ca. AE |
| 5 | AD A D | E | $\frac{1}{2} AD : \frac{1}{2} AE :: \frac{1}{2} AD : \frac{1}{2} AE$ Z or Rem ^a . BDA & D & BDE ca. BDA : ca. BDE :: ca. A : ca. E E. ca. AD : ca. AE : ca. BDA |
| 6 | AD A D | ED | $\frac{1}{2} AD : \frac{1}{2} AE :: \frac{1}{2} AD : \frac{1}{2} AE$ Z or Rem ^a . BDA & D & BDE ca. BDE : ca. BDA :: ca. AD : ca. ED E. ca. A : ca. AE : ca. AD : ca. AB : ca. EB |
| 7 | AD A ED | AE | $\frac{1}{2} AD : \frac{1}{2} AE :: \frac{1}{2} AD : \frac{1}{2} AE$ Z or x AB & EB is AE E. ca. AD : ca. AE : ca. BDA |
| 8 | AD A ED | D | $\frac{1}{2} AD : \frac{1}{2} AE :: \frac{1}{2} AD : \frac{1}{2} AE$ ca. AD : ca. ED :: ca. BDA : ca. BDE Z or x BDA & BDE is D E. ca. AD : ca. AE : ca. BDA |
| 9 | AD A D | D | $\frac{1}{2} AD : \frac{1}{2} AE :: \frac{1}{2} AD : \frac{1}{2} AE$ ca. A : ca. AE : ca. BDA : ca. BDE Z or x BDA & BDE is D E. ca. AD : ca. AE : ca. AD |
| 10 | AD A E | AE | $\frac{1}{2} AD : \frac{1}{2} AE :: \frac{1}{2} AD : \frac{1}{2} AE$ Z or x AB & EB is AE E. ca. AD : ca. AE : ca. AD |
| 11 | AD ED AE A D | D | $\frac{1}{2} AE + \frac{1}{2} x AD & ED is \frac{1}{2} Z$ $\frac{1}{2} AE - \frac{1}{2} x AD & ED is \frac{1}{2} rema. G$ ca. A : ca. AD : ca. A : ca. ED : ca. Z : ca. rema. G is $\frac{1}{2} D$ |
| 12 | AD ED AE A D | ED | $\frac{1}{2} A - \frac{1}{2} x E & D is \frac{1}{2} Z$ $\frac{1}{2} A - \frac{1}{2} x E & D is \frac{1}{2} rema. G$ ca. A : ca. A : ca. E : ca. E : ca. F : ca. rema. G is $\frac{1}{2} ED$ |

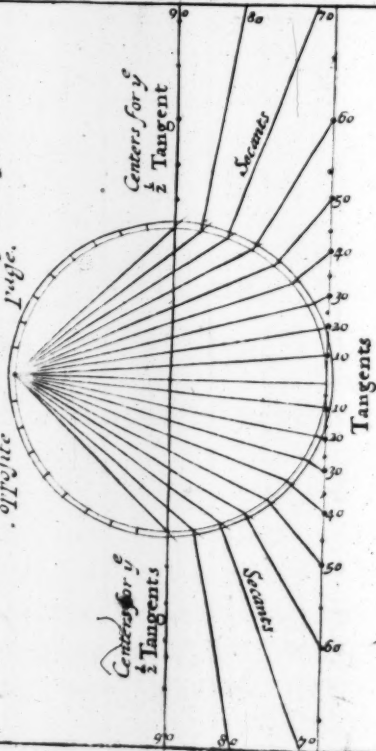
**A Stereographick Projection
of the Sphere Lat: 51:32.**



| In the Right-angled Triangle $\odot RP$. | | | In the Quadrantal Triangle $\odot FZ$. | | |
|--|-----------------------------------|----------------------------------|--|--------------------------------------|------------------------------------|
| Mid. part | Extr. Conj. | Ext. Disj. | Mid. part | Ext. Conj. | Ext. Disj. |
| Leg $\odot R$ | Comp $\odot PR$ Leg $\odot PR$ | Comp $\odot P$ Comp $\odot P$ | Comp $\odot F$ | $\angle \odot P$ | Comp PZ $\angle \odot Z$ |
| Comp \odot | Comp $\odot P$ Leg $\odot R$ | Comp P Leg RP | $\angle \odot P$ | Comp $\odot F$ Comp PZ | $\angle \odot Z$ $\angle \odot$ |
| Comp $\odot P$ | Comp \odot Comp P | Leg $\odot R$ Leg RP | Comp PZ | $\angle \odot F$ $\angle \odot Z$ | $\angle \odot$ Comp $\odot P$ |
| Comp P | Comp $\odot P$ Leg $\odot RP$ | Comp \odot Leg $\odot R$ | $\angle \odot Z$ | Comp PZ $\angle \odot$ | Comp $\odot P$ $\angle \odot F$ |
| Leg RP | Comp P Leg $\odot R$ | Comp \odot Comp $\odot R$ | $\angle \odot$ | $\angle \odot Z$ Comp $\odot P$ | $\angle \odot F$ Comp PZ |

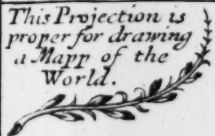
The Sterographic Project

This is a Preparatory Scheme for drawing the Sphere in the
 opposite Page.

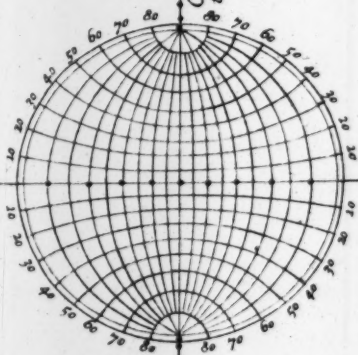


tion of the Sphere.

*This Projection is
proper for drawing
a Map of the
World.*



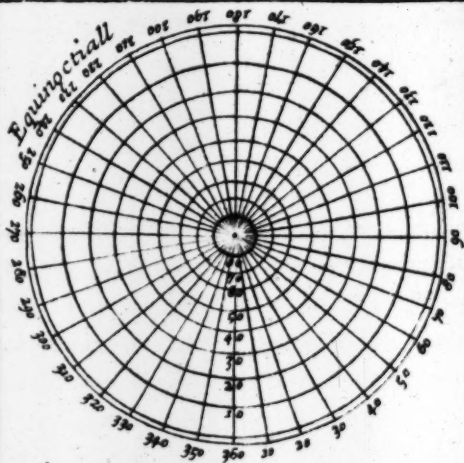
*Centers to draw
the Parallels.*



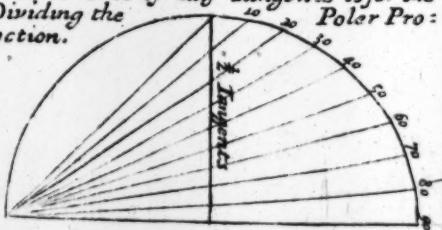
*Centers to draw
the Parallels.*

The Poler Projection

This Projection is performed by Dividing $\frac{1}{2}$ Radius into half Tangents, by $\frac{1}{2}$ Annexed Schema.

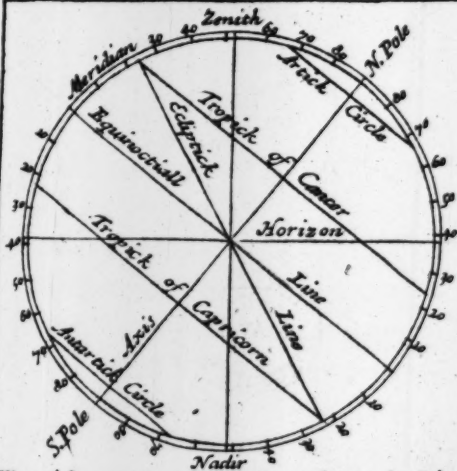


This Scheme of half Tangents is for the Dividing the Polar Projection.

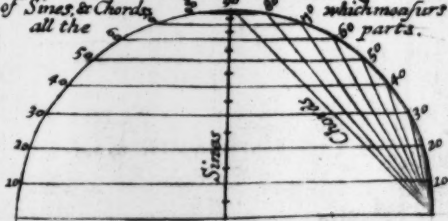


The Orthographick Projection of the Sphere. Latitude $51:30$.

This Projection is to be Measured by the line
of Sines and Chords.



This Scheme is to shew the making the Line
of Sines, & Chords, which measures
all the 60 parts.



Problems of Plain Sailing.

Problem I.

*A Ship sails S. S. W. $\frac{1}{4}$ W. 70 Leag.
I Demand her Dep^r. & Dif^r Lat.*



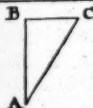
For the Dep^r BC:

For the Dif^r Lat: AB

| | |
|--|--|
| <p><i>As Rad. 100000</i> <i>to $\frac{1}{2}$ Dist. AC 70^c 18450</i> <i>So is S. Cour. \angle BAC. $2\frac{1}{4}$ p 97109</i> <i>to Depa. BC 36^c 215558</i></p> | <p><i>As Rad. 100000</i> <i>to Dist AC 70 18450</i> <i>So is S. Co: ACB. $5\frac{1}{4}$ p 99333</i> <i>to Dif^r lat AB. 60: 217783</i></p> |
|--|--|

Problem II.

*A Ship sails S. S. W. $\frac{1}{4}$ W & has alterd
her Lat. 60^c I demand her Distance
and Dep^r.*



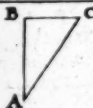
For the Distance AC.

For the Dep^r BC.

| | |
|---|---|
| <p><i>As S. Co: ACB. $5\frac{1}{4}$ p 99333</i> <i>to Dif. Lat: AB. 60^c 17783</i> <i>So is Rad. 100000</i> <i>to Dist. AC 70^c 18450</i></p> | <p><i>As S. Co: AB. $5\frac{1}{4}$ p 99333</i> <i>to Dif. Lat. AB. 60^c 17783</i> <i>So is S. Co: BAC. $2\frac{1}{4}$ p 97109</i> <i>to Dep. BC. 36^c 215558</i></p> |
|---|---|

Problem III.

*A Ship sails S. S. W. $\frac{1}{4}$ W. and is Dep^r from^y
Merid. 36 Leag. I demand her Dist. sailed
and Dif. of Latitude.*



For her Dist. sailed AC.

For Dif. Lat. AB.

| | |
|---|--|
| <p><i>As S. Co: BAC. $2\frac{1}{4}$ p 97109</i> <i>to Dep. BC. 60^c 15559</i> <i>So is Rad. 100000</i> <i>to Dist. AC. 70^c 18450</i></p> | <p><i>As S. Co: BAC. $2\frac{1}{4}$ p 97109</i> <i>to Dep. BC. 36^c 15563</i> <i>So is S. Co: ACB. $5\frac{1}{4}$ p 99333</i> <i>to Dif. Lat. AB. 60^c 217783</i></p> |
|---|--|

Problems of Plain Sailing

Problem IV.

A Ship being in a Certain Paralel sailes betwene the S.^e and W.^e 70 leagues & has altered her Lat. 60 Leag. I D. her Course and Departur.



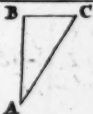
For the Course

For the Departure

| | |
|---|--|
| <p>As y^e Dist. Run AC. 70: 18450 is to the Rad. 100000 So y^e Dif. Lat. 60 17781 to y^e Comp Co: 57 24 33 1/2 Comp is 32 1/2</p> | <p>As the Rad. 90: 100000 is to Dist. 70: 18450 So is Sine 24 33 1/2 to Dep. 1:155559</p> |
|---|--|

Problem V.

A Ship sailes in the N. E. quadrant 70 Leag. and is Depted from the Merid. 36 Leag. I demand her Course & Dif. of Lat.



For the Course

For y^e Dif. Lat.

| | |
|---|---|
| <p>As Dist. Run AC. 70: 18450 is to Rad. 90: 100000 So is Dep. BC. 36 15555 to Sine Course 24 33 1/2 97109</p> | <p>As y^e Rad. 90: 100000 to Dis AC 70: 18450 So is Cou. Sin^e Cou: 57 24 33 1/2 to Dif. Lat. AB 60. 1:17781</p> |
|---|---|

Problem VI.

A Ship sailes between the S. & E. until she has altered her Lat. 60 Leag. and is Dep.^d from y^e Merid. 36 Leag. I D. her Cour. & Dist.



For the Course BAC.

For the Dist AC.

| | |
|--|---|
| <p>As y^e Dif. Lat. AB. 60: 17781 is to y^e Dep. BC. 36: 15560 So is Tang: 45 100000 to y^e Ta: of y^e Cou: 24 33 1/2 97777</p> | <p>As y^e S. Cou: BAC 24 33 1/2 07109 is to y^e Dep. BC 60: 15563 So is the Rad. 100000 to y^e Dist AC 70: 18454</p> |
|--|---|

Oblique Sailing.

Problem I.

Being at A. I see a headland at D. bearing S.W. b S. I sail W. b N. to C. 6 l. I find it beares of me S. S. E I would know how far it is Distant & how far I was Distant at first.



For the Distance DC For Distance AD

| | |
|--------------------------------------|--------------------------------------|
| As S. L. ADC 7 ^p 00084 | As S. L. ADC 7 ^p 00084 |
| Is to Cr. AC. 18 m 12552 | Is to Cr. AC 18 m 12554 |
| So is S. L. DAC 4 ^p 98494 | So is S. L. ACD 5 ^p 99198 |
| To Cr. DC 13 m 11113 | To Cr. AD. 15 m 111756 |

Problem II.

Suppose two Ports in the same Parallel. a Ship sails from A y^e Eastermost S.W. b S 52 l. another sails from C y^e W^ermost A 61 l. thay meet at D I would know the cours stered by the second Ship and the Dist. of the Ports.



For 2^d Ships corse $\angle ACD$ For Dist. ports AC

| | |
|---|--------------------------------------|
| co. ar | co. ar |
| As DC 61 l. 82146 | As S. L. DAC 5 ^p 00801 |
| is to S. L. DAC 5 ^p 99198 | is to DC 61 l. 17853 |
| So is AD 52 l. 17160 | So is S. L. ADC 7 ^p 99915 |
| to \angle Con. ACD 4 ^p 1.98504 | to AC 79 l. 138569 |

Problem III.

Two ships sail from a port as A one sails S. S. E. to B to B 28 l the other sails S. W. $\frac{1}{4}$ S. 38 l to C I would know their bearing & Distance



Oblique Sailing.

In the Preceding Prob.

To find the bearing

| | | | |
|-------|-------------------------------|--|--------|
| CA 38 | p. m. a sem 16 | As Z C AB & AC 66. | 81804 |
| AB 28 | $\angle BAC 5 \frac{1}{2}$ | is to their diff ^s 10 | 100000 |
| Z 66 | $\angle BOC 10 \frac{1}{2}$ | So is $\angle ZCB & C 5 \frac{1}{2}$ | 102223 |
| X 10 | $\frac{1}{2} Z 5 \frac{1}{2}$ | to $\angle diff^s \angle SBOC 1 \frac{1}{2}$ | 194027 |

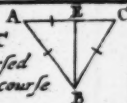
For their Distance

| | | | |
|---------------------------------------|--------------------------------|------|--------|
| The half Z 15 $\frac{1}{4}$ | As $\angle S \angle C 4$ | p. s | 02505 |
| $\frac{1}{2} Diff^s ad 1 \frac{1}{2}$ | Is to AB 28 l. | | 14472 |
| Gives $\angle B 6 \frac{1}{2}$ | So is $\angle A 5 \frac{1}{2}$ | p. s | 99493 |
| Sub. leaves 4 p. s | to BC 36 Leagues | | 125469 |

Therefore their bearing is East by North and North by South and Distance from each other 36 Leagues

Problem IV

A ship sails from a port at A $20 \frac{1}{2}$ N to C 61 l. then more N^{erly} 42 l. to B and is forced back to his port A 54 l. I would know his course from B to C & how she sailed back to A



| | | | |
|-------|----------------------------------|--------|-----------------------|
| AB 54 | As the base AC 61. | 82146 | AC 67 |
| BC 42 | is to Z cr ^s 96 | 19822 | Seg 19 |
| Z 96 | So is their Diff ^s 12 | 10791 | X 42 |
| X 12 | to Segm. base 19 | 110759 | $\frac{1}{2}$ X 21 EC |

To find y Cou. from C to B For y Cou. back to y port

| | | | |
|-------------------|---------|--------------------------|--------|
| As BC 42 | 102324 | As AB 54 l. | 82676 |
| is to 90 | 1000000 | is to $\angle BCA 60$. | 99375 |
| So is 21 | 132222 | So is CB 42 l. | 16232 |
| $\angle BEC 60$. | 969898 | to $\angle BAC 42$: 20. | 198283 |

Therefore Cou. from C to B Her Cou. from B to A is S.

21. 35. 37 E or NE $\frac{1}{2}$ N fore 42. 03 E or SE $\frac{1}{2}$ S fore

*A Table of Artificial Sines
to every quarter point.*

| | Sine | Cofine | Tangent | |
|---------------|--------|--------|----------------------|---------------|
| $\frac{1}{4}$ | 869143 | 999947 | 869196 | $\frac{3}{4}$ |
| $\frac{1}{2}$ | 890066 | 999790 | 899275 | $\frac{1}{2}$ |
| $\frac{3}{4}$ | 910630 | 999527 | 917102 | $\frac{1}{4}$ |
| 1 | 929023 | 999157 | 929866 | 7 |
| $\frac{1}{4}$ | 938569 | 998677 | 939945 | $\frac{3}{4}$ |
| $\frac{1}{2}$ | 946261 | 998090 | 948171 | $\frac{1}{2}$ |
| $\frac{3}{4}$ | 952739 | 997385 | 955354 | $\frac{1}{4}$ |
| 2 | 958283 | 965615 | 661722 | 6 |
| $\frac{1}{4}$ | 963105 | 995614 | 967491 | $\frac{3}{4}$ |
| $\frac{1}{2}$ | 967326 | 994546 | 972780 | $\frac{1}{2}$ |
| $\frac{3}{4}$ | 971099 | 993336 | 977762 | $\frac{1}{4}$ |
| 3 | 974473 | 991984 | 982489 | 5 |
| $\frac{1}{4}$ | 977506 | 990480 | 987026 | $\frac{3}{4}$ |
| $\frac{1}{2}$ | 980228 | 988823 | 991404 | $\frac{1}{2}$ |
| $\frac{3}{4}$ | 982704 | 986981 | 995723 | $\frac{1}{4}$ |
| 4 | 984948 | 984948 | 1000000 | 4 |
| | Cofine | Sine | Cotang. ^t | |

*Tangents and Secants,
of the Mariners Compass.*

| | Cotang ^t | Secant | Cofecant | |
|---------------|---------------------|-----------|-----------|---------------|
| $\frac{1}{4}$ | 113 08 03 | 100 00 52 | 113 08 56 | $\frac{3}{4}$ |
| $\frac{1}{2}$ | 110 07 24 | 100 02 09 | 110 09 33 | $\frac{1}{2}$ |
| $\frac{3}{4}$ | 108 28 07 | 100 04 72 | 108 33 69 | $\frac{1}{4}$ |
| 1 | 107 01 33 | 100 08 42 | 107 09 76 | 7 |
| $\frac{1}{4}$ | 106 01 08 | 100 13 22 | 106 14 30 | $\frac{3}{4}$ |
| $\frac{1}{2}$ | 105 18 28 | 100 19 09 | 105 37 38 | $\frac{1}{2}$ |
| $\frac{3}{4}$ | 104 46 45 | 100 26 14 | 104 72 60 | $\frac{1}{4}$ |
| 2 | 103 8 27 | 100 34 38 | 104 17 16 | 6 |
| $\frac{1}{4}$ | 103 25 08 | 100 43 85 | 103 68 94 | $\frac{1}{4}$ |
| $\frac{1}{2}$ | 102 72 19 | 100 54 53 | 103 26 73 | $\frac{1}{2}$ |
| $\frac{3}{4}$ | 102 22 38 | 100 66 63 | 102 89 00 | $\frac{1}{4}$ |
| 3 | 101 75 10 | 100 80 15 | 102 55 26 | 5 |
| $\frac{1}{4}$ | 101 29 73 | 100 95 19 | 102 24 93 | $\frac{3}{4}$ |
| $\frac{1}{2}$ | 100 85 95 | 101 11 76 | 101 97 71 | $\frac{1}{2}$ |
| $\frac{3}{4}$ | 100 72 76 | 101 30 29 | 101 72 81 | $\frac{1}{4}$ |
| 4 | 100 00 00 | 101 50 51 | 101 50 51 | 4 |
| | Tangent | Cofecant | Secant | |

A Table of Square

| Square | root | Cubes. | Square | Root | Cubes. |
|--------|------|--------|--------|------|--------|
| 4 | 2 | 8 | 1024 | 32 | 32768 |
| 9 | 3 | 27 | 1084 | 33 | 35772 |
| 16 | 4 | 64 | 1156 | 34 | 39204 |
| 25 | 5 | 125 | 1225 | 35 | 42875 |
| 36 | 6 | 216 | 1296 | 36 | 46656 |
| 49 | 7 | 343 | 1369 | 37 | 50653 |
| 64 | 8 | 512 | 1444 | 38 | 54872 |
| 81 | 9 | 729 | 1521 | 39 | 59319 |
| 100 | 10 | 1000 | 1600 | 40 | 64000 |
| 121 | 11 | 1331 | 1681 | 41 | 68921 |
| 144 | 12 | 1728 | 1764 | 42 | 74088 |
| 169 | 13 | 2197 | 1849 | 43 | 81307 |
| 196 | 14 | 2744 | 1936 | 44 | 85184 |
| 225 | 15 | 3375 | 2025 | 45 | 87120 |
| 256 | 16 | 4096 | 2116 | 46 | 97336 |
| 289 | 17 | 513 | 2209 | 47 | 103823 |
| 324 | 18 | 5832 | 2304 | 48 | 110592 |
| 361 | 19 | 6859 | 2401 | 49 | 117649 |
| 400 | 20 | 8000 | 2500 | 50 | 125000 |
| 441 | 21 | 9261 | 2601 | 51 | 132651 |
| 484 | 22 | 10648 | 2704 | 52 | 140608 |
| 529 | 23 | 11197 | 2809 | 53 | 148877 |
| 576 | 24 | 13824 | 2916 | 54 | 156464 |
| 625 | 25 | 15625 | 3025 | 55 | 166375 |
| 676 | 26 | 17576 | 3136 | 56 | 175616 |
| 729 | 27 | 19683 | 3249 | 57 | 185193 |
| 784 | 28 | 21952 | 3364 | 58 | 195092 |
| 841 | 29 | 24389 | 3481 | 59 | 208179 |
| 900 | 30 | 27000 | 3600 | 60 | 216000 |
| 961 | 31 | 29791 | 3721 | 61 | 226981 |

and cubick Roots.

| Square | Root | Cubes. | Square | Root | Cubes. |
|--------|------|--------|--------|------|---------|
| 3844 | 62 | 238328 | 7864 | 94 | 778688 |
| 3969 | 63 | 250047 | 7649 | 93 | 804357 |
| 4096 | 64 | 262144 | 7436 | 92 | 830584 |
| 4225 | 65 | 274625 | 7225 | 91 | 857375 |
| 4356 | 66 | 287460 | 7016 | 90 | 884736 |
| 4489 | 67 | 300963 | 6809 | 89 | 912673 |
| 4624 | 68 | 314432 | 6604 | 88 | 941192 |
| 4761 | 69 | 328509 | 6401 | 87 | 963409 |
| 4900 | 70 | 352970 | 10000 | 100 | 1000000 |
| 5041 | 71 | 357911 | 10201 | 101 | 1030301 |
| 5184 | 72 | 373248 | 10404 | 102 | 1061208 |
| 5329 | 73 | 389917 | 10609 | 103 | 1092721 |
| 5466 | 74 | 389694 | 10816 | 104 | 1104864 |
| 5625 | 75 | 421875 | 11005 | 105 | 1155505 |
| 5776 | 76 | 443676 | 11206 | 106 | 1187806 |
| 5929 | 77 | 456533 | 11440 | 107 | 1225043 |
| 6084 | 78 | 473712 | 11664 | 108 | 1287702 |
| 6241 | 79 | 493039 | 11881 | 109 | 1205029 |
| 6400 | 80 | 512000 | 12100 | 110 | 1331000 |
| 6561 | 81 | 531431 | 12321 | 111 | 1367631 |
| 6724 | 82 | 551368 | 12544 | 112 | 1408924 |
| 6889 | 83 | 571787 | 12769 | 113 | 1442897 |
| 7056 | 84 | 592704 | 12996 | 114 | 1481544 |
| 7225 | 85 | 614125 | 13225 | 115 | 1520875 |
| 7276 | 86 | 625736 | 13456 | 116 | 1560896 |
| 7569 | 87 | 658503 | 13689 | 117 | 1501613 |
| 7747 | 88 | 681472 | 13924 | 118 | 1643032 |
| 8921 | 89 | 783968 | 14161 | 119 | 1685139 |
| 8100 | 90 | 729000 | 14400 | 120 | 1728000 |
| 8381 | 91 | 753571 | 14641 | 121 | 1771561 |

- 1 Ensigne
- 2 Mizzen Vane
- 3 Mizzen top saile
- 4 Mizzen top saile yard
- 5 Cross jack yard
- 6 Mizzen yard
- 7 Main Vane
- 8 Main Pendant
- 9 Main Top gallant saile
- 10 Main Top saile
- 11 Main Saile
- 12 Fore Vane
- 13 Fore Top gallant saile
- 14 Fore Top saile
- 15 Fore saile
- 16 Jack
- 17 Sprit saile top saile





- 18 Sprit saile
- 19 Foretop gallant stay
- 20 Foretop gallant boulders
- 21 Foretop mast stay
- 22 Foretop saile boulders
- 23 Crane line
- 24 Fore stay
- 25 Main stay
- 26 Main topmast stay
- 27 Main top gallant stay
- 28 Main top gallant boulders
- 29 Foretop gallant braces
- 30 Foretop saile braces
- 31 Main top saile boulders
- 32 Gallies
- 33 Poop Lanthornes
- 34 Main top saile brace

| OFFICERS | 1 Rate | 2 Rate | 3 Rate |
|--------------------------|----------|----------|----------|
| Captain | N 15 Sh. | N 12 Sh. | N 10 Sh. |
| Lieutenant | 3 Sh. | 3 Sh. | 2 Sh. 6 |
| Master | 7:0:0 | 6.6.0 | 4.13.0 |
| Mat-Mate & Pilot | 6 3.6.0 | 4 3.0.0 | 3 2.16.0 |
| Quarter Master | 4 1.15.0 | 4 1.15.0 | 4 1.12.0 |
| Quarter Ma-Mate | 4 1.10.0 | 4 1.10.0 | 2 1.8.0 |
| Boatwain | 4.0.0 | 3.10.0 | 3.0.0 |
| Boatwain's Mate | 2 1.15.0 | 1 1.15.0 | 1 1.12.0 |
| Yeomen of Sheets | 4 1.12.0 | 4 1.10.0 | 2 1.8.0 |
| Gunner | 4.0.0 | 3.10.0 | 3.0.0 |
| Gunner's Mate | 2 1.15.0 | 1 1.15.0 | 1 1.12.0 |
| Quarter Gunner | 4 1.6.0 | 4 1.6.0 | 4 1.5.0 |
| Carpenter | 4 0 0 | 3.20.0 | 3.0.0 |
| Carpenter's Mate | 2 2.0.0 | 2 2.0.0 | 1 1.16.0 |
| Carpenter's Crew | 9 1.6.0 | 6 1.6.0 | 4 1.5.0 |
| Chyrurgeon | 2.10.0 | 2.10.0 | 2.10.0 |
| Chyrurg: Mate | 1.10.0 | 1.10.0 | 1.10.0 |
| Purser | 4.0.0 | 3.10.0 | 3.0.0 |
| Steward | 1.5.0 | 1.5.0 | 1.5.0 |
| Steward's Mate | 1.0.8 | 1.0.8 | 1.0.8 |
| Midshipman | 8 2.5.0 | 6 2.0.0 | 4 1.17.6 |
| Corporal | 1.15.0 | 1.12.0 | 1.10.0 |
| Coxwain | 1.12.0 | 1.10.0 | 1.8.0 |
| Trumpeter | 1.10.0 | 1.8.0 | 1.5.0 |
| Cook | 1.5.0 | 1.5.0 | 1.5.0 |
| Armourer | 1.5.0 | 1.5.0 | 1.5.0 |
| Gunsmith | 1.5.0 | 1.5.0 | |

| 3 Rate | 4 Rate | 5 Rate | 6 Rate |
|--------------------|-----------------------|----------|-----------------------|
| N 10 Sh: 2 Sh: 6 d | N 7 Sh: 6 d 2 Sh: 6 d | N 6 Sh: | N 5 Sh: |
| 4.13.8 | 4.6.2 | 3.17.6 | Cap ⁿ Mast |
| 2.16.2 | 2.2.7.10 | 2.2.2.0 | 1 2.2.0 |
| 1.12.0 | 4 1.10.0 | 3 1.8.0 | 2 1.6.0 |
| 1.8.0 | 2 1.8.0 | 1 1.6.0 | 1 1.5.0 |
| 3.0.0 | 2.10.0 | 2.5.0 | 2.0.0 |
| 1.12.0 | 1 1.10.0 | 1 1.8.0 | 1 1.6.0 |
| 1.8.0 | 2 1.8.0 | | |
| 3.0.0 | 2.10.0 | 2.5.0 | 2.0.0 |
| 1.12.0 | 1 1.10.0 | 1 1.8.0 | 1 1.6.0 |
| 1.5.0 | 4 1.5.0 | 1 1.5.0 | 1 1.5.0 |
| 3.0.0 | 2.10.0 | 2.5.0 | 2.0.0 |
| 1.16.0 | 1 1.14.0 | 1 1.12.0 | 1 1.10.0 |
| 1.5.0 | 3 1.5.0 | 1 1.5.0 | 1 1.5.0 |
| 2.10.0 | 2.10.0 | 2.10.0 | 2.10.0 |
| 1.10.0 | 1.10.0 | 1.10.0 | 1.10.0 |
| 3.0.0 | 2.10.0 | 2.5.0 | 2.0.0 |
| 1.5.0 | 1.3.4 | 1.0.8 | 1.0.0 |
| 1.0.8 | 1.0.8 | | |
| 1.17.6 | 3 1.13.9 | 2 1.10.0 | 1 1.10.0 |
| 1.10.0 | 1.10.0 | 1.8.0 | 1 5 0 |
| 1.8.0 | 1.8.0 | 1.6.0 | |
| 1.5.0 | 1.5.0 | 1.5.0 | 1.4.0 |
| 1.5.0 | 1.5.0 | 1.5.0 | 1.4.0 |
| 1.5.0 | 1.5.0 | | |

A

Table of the Pay
of all Sea Officers
and Seamen from a
Captain to a Cabin
boy, to Shew of every
Rate in their Maⁿs
Navy, & ~~the~~ first lines
Shewes ~~the~~ pay for ~~the~~
Capⁿ and Lieutenant
by the day, and all by
rest by the Month,
Note, all's that the 6
small Columns shewes
the particular Number
of Officers at each Ship
and Vessel, carries of
that kind

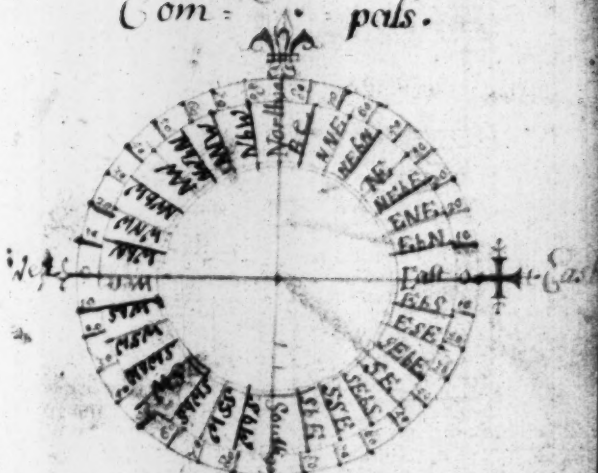
Ordinary Seamen 1.3.0
Shipⁿ 0.19.0
Barber
Grooms at Sea 0.14.0
Boy 0.9.6

1.3.0 In
each Rate
Yemen of Powder
Cook's Mate
Carpenter's Mate
Swabber
Cooper
Able Seamen



The & Mariners' *North*

Compass.



W. H. Miller

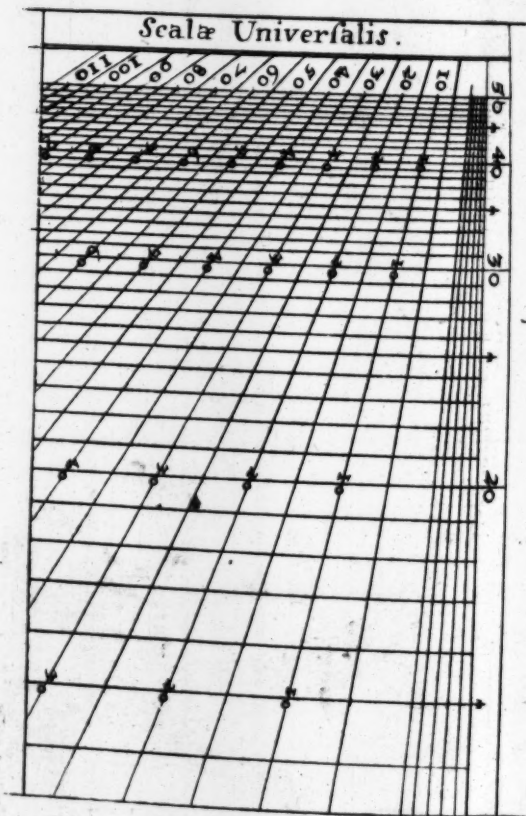
A Table of the Angles w^{ch} every Rhumb
or point of y^e Compass mak's wth y^e Meridian.

| NORTH | SOUTH | | | P. M. | NORTH | SOUTH |
|------------|-------------|---|----|-----------|------------|------------|
| | | | | XII 02 40 | | |
| | | | | 05 37 | | |
| | | | | 08 26 | | |
| N. by East | S. by East. | 1 | 10 | 11 15 | N. by West | S. by West |
| | | | | 14 03 | | |
| | | | | 16 52 | | |
| N.N.E. | S.S.E. | 2 | 20 | 19 41 | NN.W. | S.S.W. |
| | | | | 22 30 | | |
| | | | | 25 19 | | |
| | | | | 28 07 | | |
| NE. by N. | SE. by S. | 3 | 30 | 30 56 | NW. by N. | SW. by S. |
| | | | | 33 45 | | |
| | | | | 36 34 | | |
| | | | | 39 22 | | |
| North E. | South E. | 4 | 40 | 42 11 | Nor. West. | Sou. West. |
| | | | | 45 00 | | |
| | | | | 47 49 | | |
| | | | | 50 37 | | |
| NE. by E. | SE. by E. | 5 | 50 | 53 26 | NW. by W. | SW. by W. |
| | | | | 56 15 | | |
| | | | | 59 04 | | |
| | | | | 61 52 | | |
| E.N.E. | E.S.E. | 6 | 60 | 64 41 | W.N.W. | W.S.W. |
| | | | | 67 30 | | |
| | | | | 70 19 | | |
| | | | | 73 07 | | |
| E. by Nor. | E. by Sou. | 7 | 70 | 75 56 | W. by Nor. | W. by Sou. |
| | | | | 78 45 | | |
| | | | | 81 34 | | |
| | | | | 84 22 | | |
| East. | East. | 8 | 80 | 87 11 | West. | West. |
| | | | | 90 00 | | |

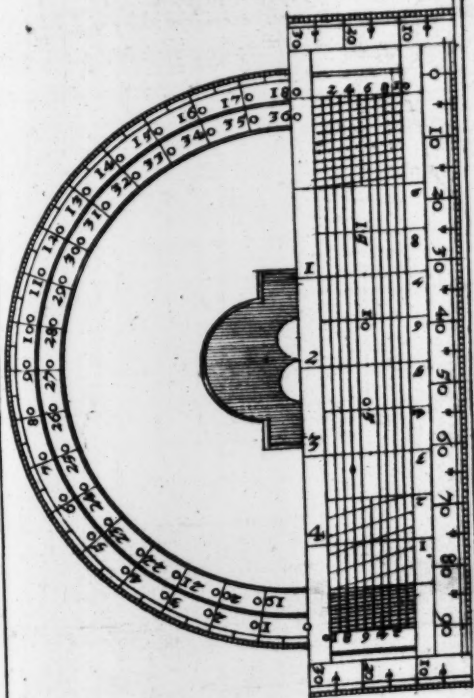
A Table of Logarithmes.

| Nū | Logarithm | Nū | Logarithm | Nū | Logarithm |
|----|-----------|----|-----------|-----|-----------|
| 1 | 0.0000000 | 34 | 1.5314789 | 67 | 1.8260748 |
| 2 | 0.3010300 | 35 | 1.5440680 | 68 | 1.8325089 |
| 3 | 0.4771212 | 36 | 1.5563025 | 69 | 1.8388491 |
| 4 | 0.6020600 | 37 | 1.5682017 | 70 | 1.8450980 |
| 5 | 0.6989700 | 38 | 1.5797836 | 71 | 1.8512583 |
| 6 | 0.7781512 | 39 | 1.5910646 | 72 | 1.8573325 |
| 7 | 0.8450980 | 40 | 1.6020600 | 73 | 1.8633229 |
| 8 | 0.9030900 | 41 | 1.6127839 | 74 | 1.8692317 |
| 9 | 0.9542425 | 42 | 1.6232493 | 75 | 1.8750613 |
| 10 | 1.0000000 | 43 | 1.6334685 | 76 | 1.8808136 |
| 11 | 1.0413927 | 44 | 1.6434527 | 77 | 1.8864907 |
| 12 | 1.0791812 | 45 | 1.6532125 | 78 | 1.8920946 |
| 13 | 1.1139433 | 46 | 1.6627578 | 79 | 1.8976271 |
| 14 | 1.1461280 | 47 | 1.6720979 | 80 | 1.9030909 |
| 15 | 1.1760913 | 48 | 1.6812412 | 81 | 1.9084850 |
| 16 | 1.2041200 | 49 | 1.6901961 | 82 | 1.9138138 |
| 17 | 1.2304489 | 50 | 1.6989700 | 83 | 1.9190781 |
| 18 | 1.2552725 | 51 | 1.7075702 | 84 | 1.9242793 |
| 19 | 1.2787536 | 52 | 1.7160033 | 85 | 1.9294189 |
| 20 | 1.3010300 | 53 | 1.7242759 | 86 | 1.9344984 |
| 21 | 1.3222193 | 54 | 1.7323938 | 87 | 1.9395192 |
| 22 | 1.3424227 | 55 | 1.7403627 | 88 | 1.9444827 |
| 23 | 1.3617278 | 56 | 1.7481880 | 89 | 1.9493900 |
| 24 | 1.3802112 | 57 | 1.7558748 | 90 | 1.9542425 |
| 25 | 1.3979400 | 58 | 1.7634280 | 91 | 1.9590414 |
| 26 | 1.4149733 | 59 | 1.7708520 | 92 | 1.9637878 |
| 27 | 1.4313638 | 60 | 1.7781512 | 93 | 1.9684829 |
| 28 | 1.4471580 | 61 | 1.7853298 | 94 | 1.9731278 |
| 29 | 1.4623980 | 62 | 1.7923917 | 95 | 1.9777236 |
| 30 | 1.4771212 | 63 | 1.7993405 | 96 | 1.9822712 |
| 31 | 1.4913617 | 64 | 1.8061800 | 97 | 1.9867717 |
| 32 | 1.5051500 | 65 | 1.8129133 | 98 | 1.9912261 |
| 33 | 1.5185139 | 66 | 1.8195439 | 99 | 1.9956352 |
| 34 | 1.5314789 | 67 | 1.8260748 | 100 | 2.0000000 |

Scala Universalis.



A Protractor.



The use of y^e Protractor

Although y^e choise of y^e Protractor
may be perform'd by y^e line of chords, yet for
avoiding of superfluous lines & arches, it must
otherwise be drawn all over your Plot the Protractor
is far more convenient, the use whereof is

~~~~~







| Sine | Tang | Tang | Hour | Latit | Chord | Rumb | Long | Leag |
|------|------|------|------|-------|-------|------|------|------|
| 10   | 10   | 10   | I    | 10    | 10    | 1    | 10   | 10   |
| 20   | 20   | 20   |      | 20    | 20    | 2    | 20   | 20   |
| 30   | 30   | 30   |      | 30    | 30    | 3    | 30   | 30   |
| 40   | 40   | 40   |      | 40    | 40    | 4    | 40   | 40   |
| 50   | 50   | 50   |      | 50    | 50    | 5    | 50   | 50   |
| 60   | 60   | 60   | II   | 60    | 60    | 6    | 60   | 60   |
| 70   | 70   | 70   |      | 70    | 70    | 7    | 70   | 70   |
| 80   | 80   | 80   |      | 80    | 80    | 8    | 80   | 80   |
| 90   | 90   | 90   | III  | 90    | 90    | 9    | 90   | 90   |
| 100  | 100  | 100  |      | 100   | 100   | 10   | 100  | 100  |
| 110  | 110  | 110  | IV   | 110   | 110   | 11   | 110  | 110  |
| 120  | 120  | 120  | V    | 120   | 120   | 12   | 120  | 120  |
| 130  | 130  | 130  |      | 130   | 130   | 13   | 130  | 130  |
| 140  | 140  | 140  |      | 140   | 140   | 14   | 140  | 140  |
| 150  | 150  | 150  |      | 150   | 150   | 15   | 150  | 150  |
| 160  | 160  | 160  | VI   | 160   | 160   | 16   | 160  | 160  |

|   | 2           | 4 | 6 | 8 | 10 | 20          | 25          | 30          | 35          | 40          |
|---|-------------|---|---|---|----|-------------|-------------|-------------|-------------|-------------|
|   | <div></div> |   |   |   |    | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> |
|   | <div></div> |   |   |   |    |             |             |             | 10          | 10          |
|   | <div></div> |   |   |   |    |             |             | 10          | 20          | 20          |
| 1 | <div></div> |   |   |   |    | 10          |             | 20          | 30          | 30          |
|   | <div></div> |   |   |   |    |             | 20          | 30          | 40          | 40          |
|   | <div></div> |   |   |   |    |             |             | 30          | 40          | 50          |
| 2 | <div></div> |   |   |   |    | 20          |             | 30          | 40          | 50          |
|   | <div></div> |   |   |   |    |             | 30          | 40          | 50          | 60          |
|   | <div></div> |   |   |   |    |             |             | 40          | 50          | 60          |
| 3 | <div></div> |   |   |   |    | 30          |             | 40          | 50          | 60          |
|   | <div></div> |   |   |   |    |             | 40          | 50          | 60          | 70          |
|   | <div></div> |   |   |   |    |             |             | 50          | 60          | 70          |
|   | <div></div> |   |   |   |    |             | 50          | 60          | 70          | 80          |
| 4 | <div></div> |   |   |   |    | 40          |             | 60          | 70          | 80          |
|   | <div></div> |   |   |   |    |             | 60          | 70          | 80          | 90          |
|   | <div></div> |   |   |   |    |             |             | 70          | 80          | 90          |
|   | <div></div> |   |   |   |    |             | 60          | 70          | 80          | 90          |
| 5 | <div></div> |   |   |   |    | 50          |             | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             |             | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
| 6 | <div></div> |   |   |   |    | 60          |             | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
| 7 | <div></div> |   |   |   |    | 70          |             | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             | 70          | 80          | 90          | 100         |
|   | <div></div> |   |   |   |    |             | 80          | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             | 90          | 100         | 110         |
|   | <div></div> |   |   |   |    |             |             |             |             |             |

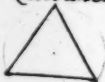
# The V Platonick Bodyes.

Octahedron

Hexahedron



Tetrahedron



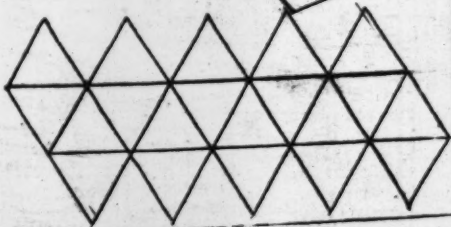
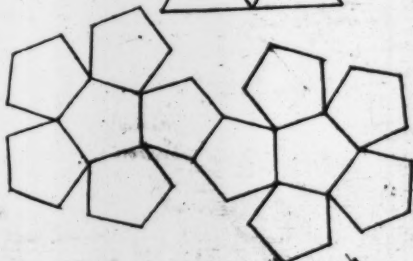
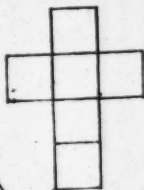
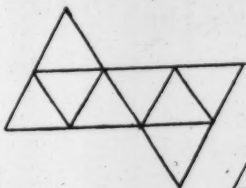
Dodecahedron



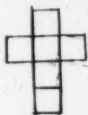
Icosahedron



FE V Platonick Bodies laid Open. ~~~~



Several Bodies laid open to shew how they



Cube

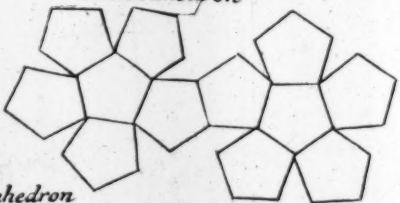
4 Pentagons & 4 Triangles



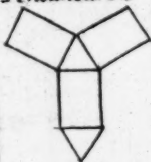
Pyramide



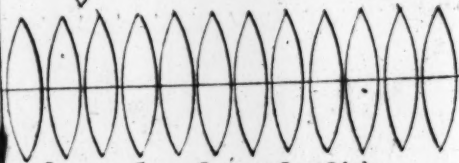
Dodecahedron



Pentahedron

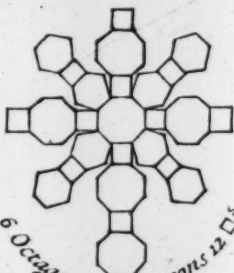


Icosahedron

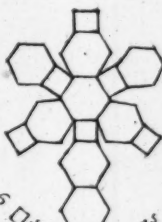


Convex Superficies of a Globe

may be cut in Pastbord & folded together



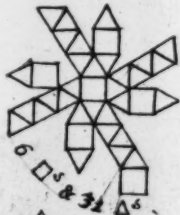
6 Octagons 8 Sexagons 12  $\square^s$  6  $\square^s$  8 Sexagons



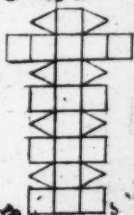
6 Octagons & 8  $\triangle^s$



6  $\square^s$  & 8  $\triangle^s$



6  $\square^s$  & 31  $\triangle^s$



10  $\square^s$  & 21  $\triangle^s$



Octahedron



Tetrahedron

A Description of Cones <sup>th</sup> w: the



*Acute*



*Right*



*Obtuse*



*Elliptical  
Section*



*Parrabolical  
Section*



*Hyperbolical  
Section*

*Hyperbole*



*Ellipsis*

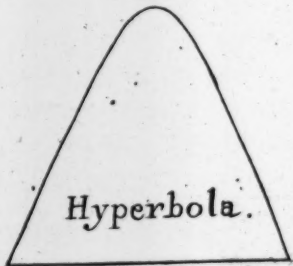
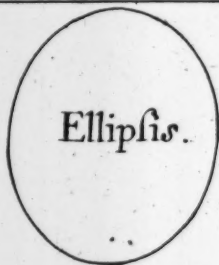
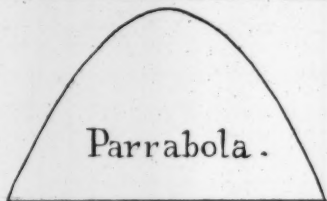


*Parrabole*

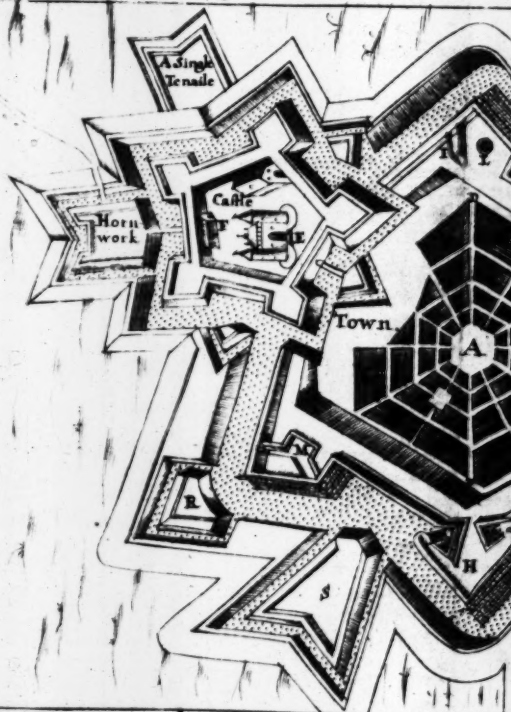




true Apperance of each Section



# A Generall Description of the Severa

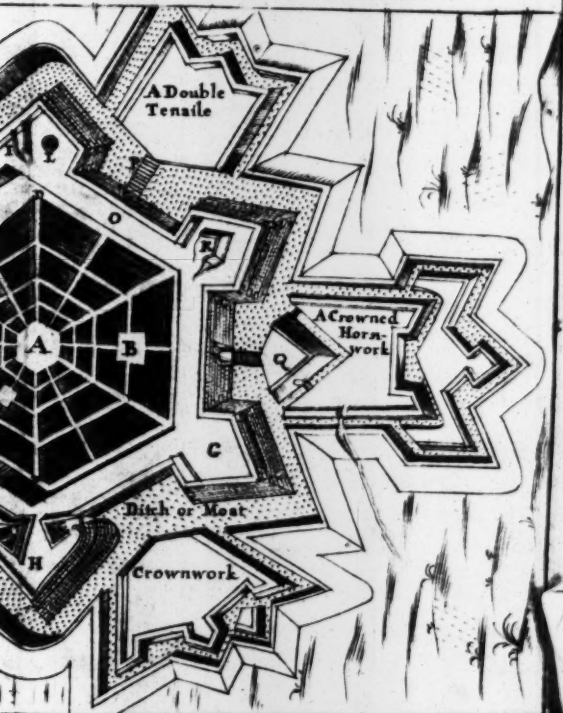


A. The Magazine Storehouse  
or Place of Rendezvous  
B. The Market-place  
C. Ground-plots of Houses  
D. Streets  
E. The Governor's House  
F. Lodgments for Souldiers

G. A Bastion or Bulwark  
H. A Bastion with Casemates,  
with Port-holes or Embrasures  
I. A Platform  
K. A Cavalier  
L. A Contramine  
M. A Retrenchment

N. Chur  
O. The  
Parapet  
P. A B  
Q. A B  
R. A H

# Several Parts of Fortification



N. Churches  
 O. The Rampire with its:  
 Parapets &c.  
 P. A Bridge  
 Q. A Ravelin  
 R. A Half-moon

S. A Swallows Tail, or in  
 French *Ouvrage a Queue* :  
*Ironde*

# A Table of Gunnery.

| The Names<br>of the sever-<br>al Pieces of<br>Ordnance. | Gun's<br>length.<br>Feet. | Gun's<br>weight.<br>Pounds. | Gun's<br>bore.<br>Inches. | Gun's<br>diameter.<br>8 parts.<br>Inches. | Ball's<br>weight.<br>Pounds. | Ball's<br>length.<br>Inches. | Ball's<br>breadth.<br>8 parts.<br>Inches. | Ball's<br>weight.<br>Pounds. |
|---------------------------------------------------------|---------------------------|-----------------------------|---------------------------|-------------------------------------------|------------------------------|------------------------------|-------------------------------------------|------------------------------|
| <i>A Base.</i>                                          | 4.6                       | 200                         | 1.2                       | 1.1                                       | 0.5                          | 4.0                          | 3.0                                       | 0.8                          |
| <i>ARabmet.</i>                                         | 5.6                       | 300                         | 1.4                       | 1.3                                       | 0.8                          | 4.1                          | 2.4                                       | 0.12                         |
| <i>AFalconet.</i>                                       | 6.0                       | 400                         | 2.2                       | 2.2                                       | 1.5                          | 7.4                          | 4.0                                       | 1.4                          |
| <i>AFalcon.</i>                                         | 7.0                       | 750                         | 2.6                       | 2.5                                       | 2.8                          | 8.2                          | 4.4                                       | 2.4                          |
| <i>Minion ord.</i>                                      | 7.0                       | 800                         | 3.0                       | 2.7                                       | 3.4                          | 8.4                          | 5.0                                       | 2.8                          |
| <i>Minion larg.</i>                                     | 8.0                       | 1000                        | 3.2                       | 3.0                                       | 3.12                         | 9.0                          | 5.0                                       | 3.4                          |
| <i>Saker least.</i>                                     | 8.0                       | 1400                        | 3.4                       | 3.2                                       | 4.12                         | 9.6                          | 6.4                                       | 3.6                          |
| <i>Saker ord.</i>                                       | 9.0                       | 1500                        | 3.6                       | 3.4                                       | 6.0                          | 10.4                         | 6.6                                       | 4.0                          |
| <i>Saker old.</i>                                       | 10.0                      | 1800                        | 4.0                       | 3.6                                       | 7.5                          | 11.0                         | 7.2                                       | 5.0                          |
| <i>Demical least.</i>                                   | 10.0                      | 2000                        | 4.2                       | 4.0                                       | 9.0                          | 12.0                         | 8.0                                       | 6.4                          |
| <i>Demical ord.</i>                                     | 11.0                      | 2700                        | 4.4                       | 4.2                                       | 10.11                        | 12.6                         | 8.0                                       | 7.4                          |
| <i>Demical old.</i>                                     | 11.0                      | 3000                        | 4.6                       | 4.4                                       | 12.11                        | 13.4                         | 8.4                                       | 8.8                          |
| <i>Culver. least.</i>                                   | 11.0                      | 4000                        | 5.0                       | 4.6                                       | 15.0                         | 14.2                         | 9.0                                       | 10.0                         |
| <i>Culverin ord.</i>                                    | 12.0                      | 4500                        | 5.2                       | 5.0                                       | 17.5                         | 16.0                         | 9.4                                       | 11.6                         |
| <i>Culver. larg.</i>                                    | 12.0                      | 4800                        | 5.4                       | 5.2                                       | 20.0                         | 16.0                         | 10.0                                      | 11.8                         |
| <i>Demical le.</i>                                      | 11.0                      | 5400                        | 6.2                       | 6.0                                       | 30.0                         | 20.0                         | 11.4                                      | 14.0                         |
| <i>Demical ord.</i>                                     | 12.0                      | 5600                        | 6.4                       | 6.1                                       | 32.0                         | 22.0                         | 12.0                                      | 17.8                         |
| <i>Demical larg.</i>                                    | 12.0                      | 6000                        | 6.6                       | 6.3                                       | 36.0                         | 22.6                         | 12.0                                      | 18.0                         |
| <i>Cannon Roy.</i>                                      | 12.0                      | 8000                        | 8.0                       | 7.4                                       | 58.0                         | 24.0                         | 14.6                                      | 32.8                         |

A Table shewing the height and weight of Iron, Lead, and Ston shot, in our English weight and measure of pounds & Ounces Averdupoise, and Inches and 8 parts.

| Inch<br>high | Quarter | Iron po<br>Ounces. | Lead po<br>Ounces. | Stone po<br>Ounces. | Inch<br>high | Quarter | Iron po<br>Ounces. | Lead po<br>Ounces. | Stone po<br>Ounces. |
|--------------|---------|--------------------|--------------------|---------------------|--------------|---------|--------------------|--------------------|---------------------|
| 1            | 0       | 18                 | 0                  | 3                   | 0            | 1       | 30                 | 0                  | 45                  |
| 1            | 1       | 18                 | 0                  | 6                   | 0            | 1       | 34                 | 0                  | 51                  |
| 1            | 2       | 18                 | 0                  | 9                   | 0            | 1       | 38                 | 0                  | 57                  |
| 1            | 3       | 18                 | 0                  | 12                  | 0            | 1       | 42                 | 0                  | 63                  |
| 2            | 0       | 1                  | 1                  | 11                  | 0            | 2       | 53                 | 0                  | 79                  |
| 2            | 1       | 1                  | 9                  | 0                   | 0            | 2       | 58                 | 0                  | 87                  |
| 2            | 2       | 2                  | 3                  | 0                   | 0            | 2       | 64                 | 0                  | 96                  |
| 2            | 3       | 2                  | 14                 | 0                   | 0            | 2       | 72                 | 0                  | 106                 |
| 3            | 0       | 3                  | 12                 | 5                   | 0            | 3       | 87                 | 3                  | 130                 |
| 3            | 1       | 4                  | 12                 | 6                   | 0            | 3       | 95                 | 0                  | 142                 |
| 3            | 2       | 6                  | 1                  | 8                   | 1            | 3       | 109                | 6                  | 161                 |
| 3            | 3       | 7                  | 5                  | 9                   | 14           | 3       | 121                | 10                 | 181                 |
| 4            | 0       | 8                  | 15                 | 11                  | 5            | 4       | 132                | 11                 | 198                 |
| 4            | 1       | 10                 | 10                 | 15                  | 15           | 4       | 138                | 0                  | 207                 |
| 4            | 2       | 12                 | 10                 | 17                  | 15           | 4       | 164                | 2                  | 246                 |
| 4            | 3       | 14                 | 14                 | 21                  | 5            | 4       | 184                | 0                  | 275                 |
| 5            | 0       | 17                 | 5                  | 24                  | 12           | 5       | 216                | 0                  | 324                 |
| 5            | 1       | 20                 | 1                  | 30                  | 0            | 5       | 240                | 0                  | 360                 |
| 5            | 2       | 23                 | 2                  | 35                  | 10           | 5       | 305                | 0                  | 457                 |
| 5            | 3       | 26                 | 6                  | 39                  | 9            | 5       | 322                | 2                  | 483                 |

# A Table of Moveable Termes.

| Day<br>Leet | Golden<br>Number  | Easter<br>Terme<br>begins | Easter<br>Terme<br>Ends | Trinity<br>Terme<br>begins | Trinity<br>Terme<br>Ends |
|-------------|-------------------|---------------------------|-------------------------|----------------------------|--------------------------|
| A           | 21. 5. 17. 16.    | Apr: 12                   | May 8                   | May 26                     | Jun: 14                  |
|             | 7. 10. 15. 18.    | Apr: 19                   | May 15                  | Jun: 2                     | Jun: 21                  |
|             | 1. 4. 9. 12.      | Apr: 26                   | May 22                  | Jun: 9                     | Jun: 28                  |
|             | 3. 6. 11. 14. 17. | May 3                     | May 29                  | Jun: 16                    | July 5                   |
|             | 8. 19.            | May 10                    | Jun: 5                  | Jun: 23                    | July 12                  |
| B           | 2. 5. 17. 16.     | Apr: 13                   | May 9                   | May 27                     | Jun: 15                  |
|             | 4. 7. 10. 15. 18. | Apr: 20                   | May 16                  | Jun: 3                     | Jun: 22                  |
|             | 1. 9. 12. 17.     | Apr: 27                   | May 23                  | Jun: 10                    | Jun: 29                  |
|             | 3. 6. 11. 14.     | May 4                     | May 3                   | Jun: 17                    | July 6                   |
|             | 8. 19.            | May 11                    | Jun: 6                  | Jun: 24                    | July 13                  |
| C           | 2. 5. 10. 15. 16. | Apr: 14                   | May 10                  | May 28                     | Jun: 16                  |
|             | 4. 7. 15. 18.     | Apr: 21                   | May 17                  | Jun: 4                     | Jun: 23                  |
|             | 1. 6. 9. 12. 17.  | Apr: 28                   | May 24                  | Jun: 11                    | Jun: 30                  |
|             | 3. 11. 14. 19.    | May 5                     | May 31                  | Jun: 18                    | July 7                   |
|             | 8.                | May 12                    | Jun: 7                  | Jun: 25                    | July 14                  |
| D           | 16.               | Apr: 8                    | May 4                   | May 22                     | Jun: 10                  |
|             | 2. 5. 10. 17.     | Apr: 15                   | May 11                  | May 29                     | Jun: 17                  |
|             | 4. 7. 12. 15. 18. | Apr: 22                   | May 18                  | Jun: 5                     | Jun: 24                  |
|             | 1. 6. 9. 17.      | Apr: 29                   | May 25                  | Jun: 12                    | July 1                   |
|             | 3. 8. 11. 14. 19. | May 6                     | Jun: 1                  | Jun: 19                    | July 8                   |
| E           | 5. 16.            | Apr: 9                    | May 5                   | May 27                     | Jun: 11                  |
|             | 2. 10. 17. 18.    | Apr: 16                   | May 12                  | May 30                     | Jun: 18                  |
|             | 1. 4. 7. 12. 15.  | Apr: 23                   | May 19                  | Jun: 6                     | Jun: 25                  |
|             | 6. 9. 14. 17.     | Apr: 30                   | May 26                  | Jun 13                     | July 2                   |
|             | 3. 8. 11. 19.     | May 7                     | Jun: 2                  | Jun: 20                    | July 9                   |
| F           | 5. 16.            | Apr: 10                   | May 6                   | May 24                     | Jun: 12                  |
|             | 2. 7. 10. 17. 18. | Apr: 17                   | May 13                  | May 31                     | Jun: 19                  |
|             | 1. 4. 12. 15.     | Apr: 24                   | May 20                  | Jun: 7                     | Jun: 26                  |
|             | 3. 6. 9. 14. 17.  | May 1                     | May 27                  | Jun: 14                    | July 3                   |
|             | 8. 11. 19.        | May 8                     | Jun: 3                  | Jun: 21                    | July 10                  |
| G           | 5. 17. 16.        | Apr: 11                   | May 7                   | May 25                     | Jun: 13                  |
|             | 2. 7. 10. 18.     | Apr: 18                   | May 14                  | Jun: 1                     | Jun: 20                  |
|             | 1. 4. 9. 12. 17.  | Apr: 25                   | May 21                  | Jun: 8                     | Jun: 27                  |
|             | 3. 6. 14. 19.     | May 2                     | May 28                  | Jun: 15                    | July 4                   |
|             | 8. 11. 19.        | May 9                     | Jun: 4                  | Jun: 22                    | July 11                  |

Easter Term hath five Returns, viz. 2 Tris Pasch. 3 Mens Pas. 4 Quind Pas. 5 Craft Asc.

Trinity Term hath four Returns, viz. 2 Craft Trin. 3 Tris Trin. 4 Quind Trin.

*The Use of the Table of Moveable Terms.*

This Table it to be used in the same manner as the last, by knowing the *Dominical Letter* and *Prime* for the Year proposed,

*Example.*

In the Year 1709, the *Dominical Letter* is B, and *Prime* 19, therefore find B in the second Column of this Table, and the *Prime* in the adjoining Square, where you will find 19 in the upper row; in a strait line to the right hand, you will find *Easter-Term* begins *May* the 11th, and ends *June* the 6th, and that *Trinity-Term* begins *June* the 24th, and ends *July* the 23d, and on the sides of the Table you will find the Returns of the said Terms.

*The Fixed Terms.*

*Hillary-Term* begins Jan. 23d, ends Feb. the 12th, and hath 4 Returns, viz.

- |   |                            |  |                            |
|---|----------------------------|--|----------------------------|
| 1 | <i>Octab. Hil. Jan. 20</i> |  | <i>Craft. Pur. Feb. 8</i>  |
| 2 | <i>Quind. Hil. Jan. 29</i> |  | <i>Octab. Pur. Feb. 10</i> |

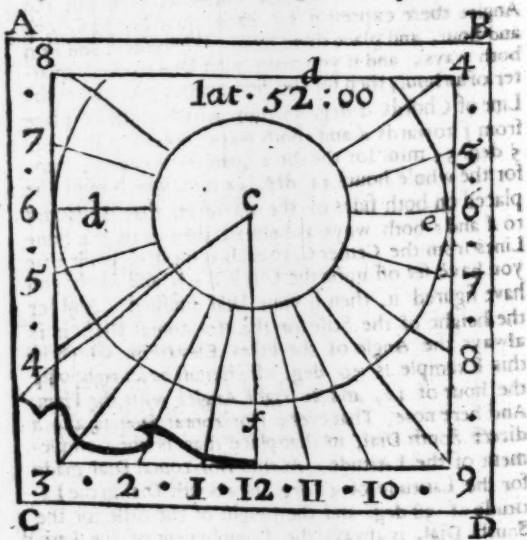
*Michaelmas-Term* begins Octob. the 23d, ends Nov. the 28th, and hath 6 Returns.

- |   |                            |  |   |                            |
|---|----------------------------|--|---|----------------------------|
| 1 | <i>Tres. Mich. Off. 21</i> |  | 4 | <i>Craft. Mar. Nov. 11</i> |
| 2 | <i>Mens. Mich. Off. 29</i> |  | 5 | <i>Off. Mar. Nov. 18</i>   |
| 3 | <i>Craft. An. Nov. 4</i>   |  | 6 | <i>Quin. Mar. Nov. 27</i>  |

Tabular

## Tabular Dialling.

The Use of these following Tables for  
the delienating any Horozontal or  
Vertical Dial for any Latitude what-  
soever; performed by the help of a  
Line of Chords. Their Use will ap-  
pear in the following Example.



First,



First, draw the Square and Frame of the Dial, with the Margent for the hours, as you may see in the foregoing Figure express'd by the Letters A B C D, then upon the Center C, describe the Arch  $d e f$ , with 60 degrees or Radius of a Line of Chords; then draw the Line C f for the hour of 12, and the Line  $d e$  at right Angles with the Line  $e f$ , through the Center C, which will be the hour of 6 and 6 both for Morning and Evening. Then supposing the Dial to be drawn for the Latitude of 50 degrees, and having recourse to the Tables for that Latitude, take out the Angles there express'd for each quarter, half hour and hour, and place them from  $f$  towards  $d$  and  $e$  on both ways; and if you make your Dial to every quarter of an hour, then for the first quarter take out of the Line of Chords 2 deg. 37 min. which distance place from  $f$  towards  $d$  and  $e$  both ways; for the half hour 5 deg. 55 min. for the three quarters 8 deg. 54 min. for the whole hours 11 deg. 55 min. which must be placed on both sides of the Meridian, that is, from  $f$  to  $d$  and  $e$  both ways as before; then draw the hour Lines from the Center C, to each respective point that you have set off upon the Circle  $d e f$ , and when you have figured it, then is your Dial finished. And for the height of the Style for the Horizontal Dial, it is always the Angle of the Poles Elevation, which in this Example is 50 deg. which must be set right over the hour of 12, and at right Angles with the Plain. And here note, That every Horizontal Dial is also a direct South Dial, in that place that is the Complement of the Latitude: As this Horizontal Dial made for the Latitude of 52 deg. is a South Dial in the Latitude of 38 deg. and the height of the Style for the South Dial, is always the Complement of the Latitude of the place for which the Dial is made. And

in the South Dials you must leave out the hours before and after 6.

They are also North or South Incliners and Recliners (and that in all Latitudes) and to every degree of Inclination and Reclination.

*The Proportion for making these Tables.*

As Radius 90 Degrees

Is to the Sine of the Latitude ;

So is the Tangent of the hour from the proper merid.

To the Tangent of the hour from the Substile.

See one Example for the hours of 1 and 11 in the forementioned Horizontal Dial for 52 Degrees.

As the Sine of 90 deg.

10,000000

Is to the Sine of 52 deg.

9,8965321

So is the Tangent of 15 deg.

9,4280525

To the Tangent of 11 deg. 55 min.

19,3393349

The distance of the hours of 11 and 1, as you may see in the Tables, by which proportion these Tables were calculated, and by which any of them may be proved.

*A Table for the Horizontal Dial, Latit. 51 d. 32 m.*

| <u>H.</u> | <u>D.</u> | <u>M.</u> | <u>H.</u> |
|-----------|-----------|-----------|-----------|
|           | 02        | 57        |           |
|           | 05        | 53        |           |
|           | 08        | 51        |           |
| <u>1</u>  | 11        | 51        | <u>11</u> |
|           | 14        | 53        |           |
|           | 17        | 58        |           |
|           | 21        | 6         |           |
| <u>2</u>  | 24        | 19        | <u>10</u> |
|           | 27        | 36        |           |
|           | 31        | 00        |           |
|           | 34        | 28        |           |
| <u>3</u>  | 38        | 03        | <u>9</u>  |
|           | 41        | 49        |           |
|           | 45        | 34        |           |
|           | 49        | 32        |           |
| <u>4</u>  | 53        | 36        | <u>8</u>  |
|           | 57        | 47        |           |
|           | 62        | 07        |           |
|           | 66        | 33        |           |
| <u>5</u>  | 71        | 06        | <u>7</u>  |
|           | 75        | 44        |           |
|           | 80        | 27        |           |
|           | 85        | 13        |           |
| <u>6</u>  | 90        | 00        | <u>6</u>  |

|   | 1  |       | 2     |       | 3     |       | 4     |       | 5     |    |  |
|---|----|-------|-------|-------|-------|-------|-------|-------|-------|----|--|
|   | H. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |  |
|   |    | 0 4   | 0 8   | 0 11  | 0 15  | 0 19  |       |       |       |    |  |
|   |    | 0 8   | 0 16  | 0 23  | 0 32  | 0 39  |       |       |       |    |  |
|   |    | 0 12  | 0 21  | 0 36  | 0 48  | 0 59  |       |       |       |    |  |
| 1 |    | 0 16  | 0 32  | 0 48  | 1 04  | 1 20  | 11    |       |       |    |  |
|   |    | 0 20  | 0 41  | 1 01  | 1 21  | 1 42  |       |       |       |    |  |
|   |    | 0 25  | 0 50  | 1 14  | 1 39  | 2 04  |       |       |       |    |  |
|   |    | 0 29  | 1 59  | 1 29  | 1 58  | 2 27  |       |       |       |    |  |
| 2 |    | 0 35  | 1 09  | 1 44  | 2 18  | 2 53  | 10    |       |       |    |  |
|   |    | 0 40  | 1 20  | 2 00  | 2 40  | 3 19  |       |       |       |    |  |
|   |    | 0 45  | 1 32  | 2 16  | 3 03  | 3 49  |       |       |       |    |  |
|   |    | 0 52  | 1 45  | 2 38  | 3 30  | 4 22  |       |       |       |    |  |
| 3 |    | 1 00  | 2 00  | 2 59  | 3 59  | 4 59  | 9     |       |       |    |  |
|   |    | 1 08  | 2 16  | 3 25  | 4 33  | 5 41  |       |       |       |    |  |
|   |    | 1 18  | 2 36  | 3 54  | 5 11  | 6 29  |       |       |       |    |  |
|   |    | 1 30  | 2 59  | 4 28  | 5 57  | 7 26  |       |       |       |    |  |
| 4 |    | 1 44  | 3 27  | 5 10  | 6 53  | 8 35  | 8     |       |       |    |  |
|   |    | 2 01  | 4 02  | 6 03  | 8 03  | 10 01 |       |       |       |    |  |
|   |    | 2 24  | 4 48  | 7 11  | 9 32  | 11 52 |       |       |       |    |  |
|   |    | 2 57  | 5 52  | 8 45  | 11 36 | 14 24 |       |       |       |    |  |
| 5 |    | 3 43  | 7 24  | 11 01 | 14 33 | 17 59 | 7     |       |       |    |  |
|   |    | 5 00  | 9 56  | 14 43 | 19 18 | 23 38 |       |       |       |    |  |
|   |    | 7 32  | 14 50 | 21 38 | 27 52 | 33 30 |       |       |       |    |  |
|   |    | 14 53 | 27 58 | 38 32 | 46 43 | 53 01 |       |       |       |    |  |
| 6 | 90 | 00    | 90    | 00    | 90    | 00    | 90    | 00    | 90    | 00 |  |

|   | 6  |    | 7  |    | 8  |    | 9  |    | 10 |    |    |
|---|----|----|----|----|----|----|----|----|----|----|----|
| H | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
| 1 | 0  | 23 | 0  | 28 | 0  | 31 | 0  | 35 | 0  | 39 | 11 |
|   | 0  | 47 | 0  | 55 | 1  | 03 | 1  | 11 | 1  | 18 |    |
|   | 1  | 11 | 1  | 23 | 1  | 35 | 1  | 47 | 1  | 59 |    |
|   | 1  | 36 | 1  | 52 | 2  | 08 | 2  | 24 | 2  | 40 |    |
| 2 | 2  | 02 | 2  | 22 | 2  | 42 | 3  | 02 | 3  | 22 | 10 |
|   | 2  | 29 | 2  | 49 | 3  | 16 | 3  | 42 | 4  | 06 |    |
|   | 2  | 57 | 3  | 26 | 3  | 55 | 4  | 24 | 4  | 53 |    |
|   | 3  | 27 | 4  | 01 | 4  | 35 | 5  | 10 | 5  | 43 |    |
| 3 | 3  | 59 | 4  | 38 | 5  | 18 | 5  | 58 | 6  | 36 | 9  |
|   | 4  | 35 | 5  | 19 | 6  | 05 | 6  | 50 | 7  | 34 |    |
|   | 5  | 14 | 6  | 05 | 6  | 57 | 7  | 48 | 8  | 38 |    |
|   | 5  | 58 | 6  | 57 | 7  | 55 | 8  | 54 | 9  | 51 |    |
| 4 | 6  | 48 | 7  | 54 | 9  | 01 | 10 | 07 | 11 | 11 | 8  |
|   | 7  | 46 | 9  | 01 | 10 | 17 | 11 | 31 | 12 | 44 |    |
|   | 8  | 50 | 10 | 20 | 12 | 45 | 13 | 11 | 14 | 33 |    |
|   | 10 | 10 | 11 | 54 | 13 | 32 | 15 | 08 | 16 | 42 |    |
| 5 | 11 | 58 | 13 | 52 | 15 | 46 | 17 | 36 | 19 | 23 | 7  |
|   | 14 | 08 | 16 | 21 | 18 | 32 | 20 | 39 | 22 | 41 |    |
|   | 17 | 06 | 19 | 43 | 22 | 16 | 24 | 43 | 26 | 54 |    |
|   | 21 | 16 | 24 | 22 | 27 | 22 | 30 | 13 | 32 | 54 |    |
| 6 | 27 | 42 | 31 | 26 | 34 | 56 | 38 | 09 | 40 | 40 | 6  |
|   | 38 | 24 | 42 | 42 | 46 | 31 | 49 | 52 | 52 | 46 |    |
|   | 57 | 53 | 61 | 40 | 64 | 44 | 67 | 14 | 69 | 17 |    |
|   | 69 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 |    |

|          | 11    | 12    | 13    | 14    | 15    |    |
|----------|-------|-------|-------|-------|-------|----|
| H. D. M. | D. M. | D. M. | D. M. | D. M. | D. M. | H. |
|          | 0 43  | 0 47  | 0 50  | 0 54  | 0 58  |    |
|          | 1 26  | 1 34  | 1 42  | 1 49  | 1 57  |    |
|          | 2 10  | 2 22  | 2 34  | 2 45  | 2 57  |    |
| 1        | 2 55  | 3 11  | 3 27  | 3 42  | 3 58  | 11 |
|          | 3 42  | 4 02  | 4 22  | 4 41  | 5 01  |    |
|          | 4 31  | 4 55  | 5 20  | 5 45  | 6 06  |    |
|          | 5 22  | 5 50  | 6 19  | 6 47  | 7 15  |    |
| 2        | 6 17  | 6 50  | 7 24  | 7 56  | 8 29  | 10 |
|          | 7 15  | 7 43  | 8 32  | 9 09  | 9 47  |    |
|          | 8 19  | 9 02  | 9 47  | 10 29 | 11 11 |    |
|          | 9 28  | 10 18 | 11 08 | 11 57 | 12 45 |    |
| 3        | 10 48 | 11 44 | 12 41 | 13 35 | 14 30 | 9  |
|          | 12 16 | 13 19 | 14 24 | 15 24 | 16 25 |    |
|          | 13 57 | 15 08 | 16 21 | 17 30 | 18 38 |    |
|          | 15 56 | 17 16 | 18 38 | 19 54 | 21 08 |    |
| 4        | 18 16 | 19 46 | 21 16 | 22 43 | 24 06 | 8  |
|          | 21 08 | 22 50 | 24 31 | 26 06 | 27 39 |    |
|          | 24 42 | 26 34 | 28 28 | 30 13 | 31 54 |    |
|          | 29 18 | 31 27 | 33 31 | 35 26 | 37 15 |    |
| 5        | 35 22 | 37 42 | 39 57 | 41 59 | 43 53 | 7  |
|          | 43 45 | 46 12 | 48 30 | 50 31 | 52 23 |    |
|          | 55 20 | 57 35 | 59 38 | 61 23 | 62 58 |    |
|          | 71 00 | 72 28 | 73 46 | 74 49 | 75 45 |    |
| 6        | 90 00 | 90 00 | 90 00 | 90 00 | 90 00 | 6  |

|    | 16 |    | 17 |    | 18 |    | 19 |    | 20 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 1  | 1  | 1  | 06 | 1  | 09 | 1  | 13 | 1  | 16 |    |
|    | 2  | 4  | 2  | 12 | 2  | 19 | 2  | 27 | 2  | 34 |    |
|    | 3  | 8  | 3  | 19 | 3  | 31 | 3  | 42 | 3  | 53 |    |
| 1  | 4  | 13 | 4  | 28 | 4  | 43 | 4  | 59 | 5  | 14 | 11 |
|    | 5  | 20 | 5  | 39 | 5  | 58 | 6  | 18 | 6  | 37 |    |
|    | 6  | 31 | 6  | 54 | 7  | 17 | 7  | 40 | 8  | 04 |    |
|    | 7  | 44 | 8  | 11 | 8  | 38 | 9  | 06 | 9  | 34 |    |
| 2  | 9  | 02 | 9  | 34 | 10 | 06 | 10 | 38 | 11 | 10 | 10 |
|    | 10 | 25 | 11 | 01 | 11 | 34 | 12 | 11 | 12 | 51 |    |
|    | 11 | 55 | 12 | 36 | 13 | 17 | 13 | 59 | 14 | 41 |    |
|    | 13 | 33 | 14 | 20 | 15 | 06 | 15 | 54 | 16 | 40 |    |
| 3  | 15 | 24 | 16 | 16 | 17 | 09 | 18 | 01 | 18 | 53 | 9  |
|    | 17 | 27 | 18 | 26 | 19 | 24 | 20 | 22 | 21 | 19 |    |
|    | 19 | 46 | 20 | 50 | 21 | 54 | 22 | 58 | 24 | 02 |    |
|    | 22 | 25 | 23 | 36 | 24 | 46 | 25 | 59 | 27 | 07 |    |
| 4  | 25 | 30 | 26 | 50 | 23 | 06 | 29 | 22 | 30 | 38 | 8  |
|    | 29 | 11 | 30 | 37 | 32 | 01 | 33 | 24 | 34 | 45 |    |
|    | 33 | 35 | 35 | 07 | 36 | 37 | 38 | 05 | 39 | 30 |    |
|    | 39 | 03 | 40 | 40 | 42 | 52 | 43 | 45 | 45 | 12 |    |
| 5  | 45 | 44 | 47 | 23 | 48 | 56 | 50 | 27 | 51 | 52 | 7  |
|    | 54 | 09 | 55 | 42 | 57 | 10 | 58 | 22 | 59 | 48 |    |
|    | 64 | 26 | 65 | 43 | 66 | 52 | 67 | 56 | 68 | 56 |    |
|    | 76 | 37 | 77 | 20 | 78 | 00 | 78 | 36 | 79 | 09 |    |
| 6  | 80 | 00 | 80 | 00 | 80 | 00 | 90 | 00 | 90 | 00 | 6  |

|    | 21 |    | 22 |    | 23 |    | 24 |    | 25 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 1  | 20 | 1  | 24 | 1  | 28 | 1  | 31 | 1  | 35 |    |
|    | 2  | 42 | 2  | 49 | 2  | 56 | 3  | 04 | 3  | 10 |    |
|    | 4  | 05 | 4  | 15 | 4  | 26 | 4  | 37 | 4  | 47 |    |
| 1  | 5  | 29 | 5  | 44 | 5  | 58 | 6  | 13 | 6  | 27 | 11 |
|    | 6  | 56 | 7  | 14 | 7  | 32 | 7  | 51 | 8  | 08 |    |
|    | 8  | 27 | 8  | 49 | 9  | 11 | 9  | 34 | 9  | 55 |    |
|    | 10 | 00 | 10 | 26 | 10 | 52 | 11 | 19 | 11 | 44 |    |
| 2  | 11 | 41 | 12 | 11 | 12 | 41 | 13 | 13 | 13 | 42 | 10 |
|    | 13 | 26 | 14 | 01 | 14 | 56 | 15 | 10 | 15 | 43 |    |
|    | 15 | 20 | 15 | 59 | 16 | 38 | 17 | 18 | 17 | 54 |    |
|    | 17 | 24 | 18 | 08 | 18 | 52 | 19 | 35 | 20 | 17 |    |
| 3  | 19 | 43 | 20 | 31 | 21 | 13 | 22 | 08 | 22 | 52 | 9  |
|    | 22 | 15 | 23 | 08 | 24 | 01 | 24 | 53 | 25 | 41 |    |
|    | 25 | 01 | 26 | 00 | 26 | 58 | 27 | 56 | 28 | 50 |    |
|    | 28 | 11 | 29 | 16 | 30 | 18 | 31 | 21 | 32 | 18 |    |
| 4  | 31 | 50 | 32 | 56 | 34 | 02 | 35 | 10 | 36 | 08 | 8  |
|    | 36 | 00 | 37 | 11 | 38 | 20 | 39 | 30 | 40 | 32 |    |
|    | 40 | 48 | 42 | 03 | 43 | 14 | 44 | 25 | 45 | 28 |    |
|    | 46 | 31 | 47 | 46 | 49 | 00 | 50 | 08 | 51 | 10 |    |
| 5  | 53 | 09 | 54 | 20 | 55 | 27 | 56 | 33 | 57 | 31 | 7  |
|    | 60 | 57 | 61 | 59 | 62 | 16 | 63 | 55 | 64 | 44 |    |
|    | 69 | 48 | 70 | 36 | 71 | 20 | 72 | 03 | 72 | 39 |    |
|    | 79 | 38 | 80 | 04 | 80 | 27 | 80 | 50 | 81 | 10 |    |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |



|    | 26  |    | 27 |    | 28 |    | 29 |    | 30 |    |    |
|----|-----|----|----|----|----|----|----|----|----|----|----|
| H. | D.  | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 1   | 38 | 1  | 42 | 1  | 45 | 1  | 49 | 1  | 52 |    |
|    | 3   | 18 | 3  | 24 | 3  | 32 | 3  | 39 | 3  | 45 |    |
|    | 4   | 58 | 5  | 10 | 5  | 19 | 5  | 30 | 5  | 40 |    |
| 1  | 6   | 42 | 6  | 57 | 7  | 10 | 7  | 24 | 7  | 37 | 11 |
|    | 8   | 26 | 8  | 45 | 9  | 02 | 9  | 20 | 9  | 36 |    |
|    | 10  | 17 | 10 | 59 | 11 | 00 | 11 | 21 | 11 | 41 |    |
|    | 12  | 09 | 12 | 36 | 13 | 00 | 13 | 24 | 13 | 49 |    |
| 2  | 14  | 11 | 14 | 41 | 15 | 09 | 15 | 37 | 16 | 05 | 10 |
|    | 16  | 16 | 16 | 51 | 17 | 22 | 17 | 54 | 18 | 25 |    |
|    | 18  | 32 | 19 | 10 | 19 | 45 | 20 | 21 | 20 | 55 |    |
|    | 20  | 57 | 21 | 41 | 22 | 19 | 22 | 59 | 23 | 36 |    |
| 3  | 23  | 38 | 24 | 25 | 25 | 08 | 25 | 51 | 26 | 31 | 9  |
|    | 26  | 32 | 27 | 23 | 28 | 09 | 28 | 56 | 29 | 40 |    |
|    | 29  | 43 | 30 | 30 | 31 | 28 | 32 | 17 | 33 | 04 |    |
|    | 33  | 10 | 34 | 13 | 35 | 05 | 35 | 58 | 36 | 48 |    |
| 4  | 37  | 08 | 38 | 10 | 39 | 05 | 40 | 00 | 40 | 50 | 8  |
|    | 41  | 35 | 42 | 30 | 43 | 33 | 44 | 29 | 45 | 20 |    |
|    | 46  | 31 | 47 | 35 | 48 | 30 | 49 | 25 | 50 | 15 |    |
|    | 52  | 11 | 53 | 12 | 54 | 05 | 55 | 00 | 55 | 46 |    |
| 5  | 58  | 28 | 59 | 24 | 60 | 12 | 61 | 00 | 61 | 43 | 7  |
|    | 65  | 30 | 66 | 20 | 67 | 00 | 67 | 40 | 68 | 15 |    |
|    | 73  | 14 | 73 | 49 | 74 | 18 | 74 | 29 | 75 | 12 |    |
|    | 81  | 29 | 81 | 47 | 82 | 02 | 82 | 17 | 82 | 31 |    |
|    | 690 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

|   | 31 |    | 32 |    | 33 |    | 34 |    | 35 |    |    |
|---|----|----|----|----|----|----|----|----|----|----|----|
|   | H. | D. | M. | D. | M. | D. | M. | D. | M. | H. |    |
|   |    | 1  | 55 | 1  | 59 | 2  | 02 | 2  | 05 | 2  | 09 |
|   |    | 3  | 53 | 3  | 59 | 4  | 06 | 4  | 12 | 4  | 19 |
|   |    | 5  | 50 | 6  | 01 | 6  | 11 | 6  | 20 | 6  | 30 |
| 1 |    | 7  | 51 | 8  | 05 | 8  | 18 | 8  | 31 | 8  | 44 |
|   |    | 2  | 53 | 10 | 11 | 10 | 28 | 10 | 43 | 11 | 00 |
|   |    | 12 | 01 | 12 | 23 | 12 | 43 | 13 | 02 | 13 | 21 |
|   |    | 14 | 12 | 14 | 37 | 15 | 00 | 15 | 22 | 15 | 46 |
| 2 |    | 16 | 31 | 17 | 01 | 17 | 28 | 17 | 52 | 18 | 18 |
|   |    | 18 | 56 | 19 | 28 | 19 | 58 | 20 | 27 | 20 | 56 |
|   |    | 21 | 29 | 22 | 05 | 22 | 38 | 23 | 09 | 23 | 41 |
|   |    | 24 | 15 | 24 | 52 | 25 | 31 | 26 | 03 | 26 | 38 |
| 3 |    | 27 | 13 | 27 | 55 | 28 | 35 | 29 | 11 | 29 | 45 |
|   |    | 30 | 25 | 31 | 10 | 31 | 52 | 32 | 31 | 33 | 11 |
|   |    | 33 | 51 | 34 | 39 | 35 | 24 | 36 | 04 | 36 | 46 |
|   |    | 37 | 35 | 38 | 26 | 39 | 11 | 39 | 55 | 40 | 36 |
| 4 |    | 41 | 40 | 42 | 31 | 43 | 20 | 44 | 03 | 44 | 48 |
|   |    | 46 | 12 | 47 | 03 | 47 | 50 | 48 | 34 | 49 | 18 |
|   |    | 51 | 06 | 51 | 06 | 52 | 42 | 53 | 28 | 54 | 05 |
|   |    | 56 | 35 | 57 | 20 | 58 | 03 | 58 | 42 | 59 | 21 |
| 5 |    | 62 | 26 | 63 | 07 | 63 | 45 | 64 | 20 | 64 | 53 |
|   |    | 68 | 50 | 69 | 25 | 69 | 56 | 70 | 23 | 70 | 51 |
|   |    | 75 | 37 | 76 | 02 | 76 | 20 | 76 | 44 | 77 | 03 |
|   |    | 82 | 44 | 82 | 57 | 83 | 08 | 83 | 18 | 83 | 28 |
| 6 |    | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 |

|    | 36  |    | 37 |    | 38 |    | 39 |    | 40 |    |    |
|----|-----|----|----|----|----|----|----|----|----|----|----|
| H. | D.  | M. | D. | M. | D. | M. | D. | M. | D. | N. | H. |
|    | 2   | 12 | 2  | 15 | 2  | 18 | 2  | 21 | 2  | 24 |    |
|    | 4   | 25 | 4  | 31 | 4  | 38 | 4  | 43 | 4  | 50 |    |
|    | 6   | 40 | 6  | 49 | 6  | 58 | 7  | 07 | 7  | 17 |    |
| 1  | 8   | 57 | 9  | 09 | 9  | 22 | 9  | 34 | 9  | 47 | 11 |
|    | 11  | 16 | 11 | 31 | 11 | 47 | 12 | 01 | 12 | 18 |    |
|    | 13  | 41 | 14 | 00 | 14 | 15 | 14 | 35 | 14 | 55 |    |
|    | 16  | 08 | 16 | 29 | 16 | 51 | 17 | 11 | 17 | 33 |    |
| 2  | 18  | 44 | 19 | 08 | 19 | 33 | 19 | 56 | 20 | 21 | 10 |
|    | 21  | 24 | 21 | 52 | 22 | 19 | 22 | 45 | 23 | 13 |    |
|    | 24  | 14 | 24 | 43 | 25 | 14 | 25 | 41 | 26 | 12 |    |
|    | 27  | 13 | 27 | 46 | 28 | 18 | 28 | 49 | 29 | 23 |    |
| 3  | 30  | 27 | 31 | 01 | 31 | 36 | 32 | 08 | 32 | 44 | 9  |
|    | 33  | 51 | 34 | 27 | 35 | 04 | 35 | 38 | 36 | 16 |    |
|    | 37  | 28 | 38 | 06 | 38 | 45 | 39 | 19 | 39 | 58 |    |
|    | 41  | 22 | 42 | 00 | 42 | 40 | 43 | 16 | 43 | 55 |    |
| 4  | 45  | 29 | 46 | 10 | 46 | 48 | 47 | 24 | 48 | 04 | 8  |
|    | 50  | 00 | 50 | 39 | 51 | 17 | 51 | 52 | 52 | 30 |    |
|    | 54  | 46 | 55 | 24 | 56 | 00 | 56 | 33 | 57 | 10 |    |
|    | 59  | 59 | 60 | 33 | 61 | 06 | 61 | 36 | 62 | 09 |    |
| 5  | 65  | 27 | 65 | 56 | 66 | 16 | 66 | 52 | 67 | 20 | 7  |
|    | 71  | 17 | 71 | 36 | 72 | 05 | 72 | 25 | 72 | 48 |    |
|    | 77  | 22 | 77 | 38 | 77 | 55 | 78 | 09 | 78 | 25 |    |
|    | 83  | 38 | 83 | 47 | 83 | 55 | 84 | 03 | 84 | 11 |    |
|    | 690 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

|    | 41 |    | 42 |    | 43 |    | 44 |    | 45 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | H. | D. | M. | H. | D. | M. | H. | D. | M. |
|    | 2  | 27 | 2  | 30 | 2  | 33 | 2  | 36 | 2  | 37 |    |
|    | 4  | 55 | 5  | 02 | 5  | 07 | 5  | 13 | 5  | 19 |    |
|    | 7  | 25 | 7  | 34 | 7  | 42 | 7  | 52 | 8  | 00 |    |
| 1  | 8  | 57 | 10 | 10 | 10 | 21 | 10 | 32 | 10 | 43 | 11 |
|    | 12 | 31 | 12 | 45 | 13 | 00 | 13 | 12 | 13 | 28 |    |
|    | 15 | 10 | 15 | 30 | 15 | 15 | 16 | 02 | 16 | 20 |    |
|    | 17 | 52 | 18 | 13 | 18 | 34 | 18 | 51 | 19 | 10 |    |
| 2  | 20 | 42 | 21 | 06 | 21 | 27 | 21 | 48 | 22 | 11 | 10 |
|    | 23 | 45 | 24 | 02 | 24 | 26 | 24 | 50 | 25 | 15 |    |
|    | 26 | 38 | 27 | 00 | 27 | 32 | 28 | 00 | 28 | 25 |    |
|    | 29 | 51 | 30 | 20 | 30 | 47 | 31 | 15 | 31 | 46 |    |
| 3  | 33 | 13 | 33 | 31 | 34 | 15 | 34 | 45 | 35 | 15 | 9  |
|    | 36 | 46 | 37 | 20 | 37 | 51 | 38 | 21 | 38 | 52 |    |
|    | 40 | 30 | 41 | 04 | 41 | 36 | 42 | 08 | 42 | 40 |    |
|    | 44 | 26 | 45 | 00 | 45 | 33 | 46 | 06 | 46 | 36 |    |
| 4  | 48 | 36 | 49 | 10 | 49 | 42 | 50 | 12 | 50 | 44 | 8  |
|    | 53 | 01 | 53 | 31 | 54 | 05 | 54 | 35 | 55 | 05 |    |
|    | 57 | 38 | 58 | 10 | 58 | 35 | 59 | 07 | 59 | 34 |    |
|    | 62 | 35 | 63 | 04 | 63 | 30 | 63 | 55 | 64 | 20 |    |
| 5  | 67 | 42 | 68 | 07 | 68 | 25 | 68 | 50 | 69 | 12 | 7  |
|    | 73 | 00 | 73 | 25 | 73 | 43 | 73 | 52 | 74 | 16 |    |
|    | 78 | 37 | 78 | 51 | 79 | 03 | 79 | 15 | 79 | 26 |    |
|    | 84 | 17 | 84 | 24 | 84 | 30 | 84 | 34 | 84 | 42 |    |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

|    | 46 |    | 47 |    | 48 |    | 49 |    | 50 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 2  | 41 | 2  | 44 | 2  | 47 | 2  | 49 | 2  | 52 |    |
|    | 5  | 24 | 5  | 30 | 5  | 35 | 5  | 40 | 5  | 45 |    |
|    | 8  | 07 | 8  | 16 | 8  | 24 | 8  | 31 | 8  | 39 |    |
| 1  | 10 | 54 | 11 | 05 | 11 | 16 | 11 | 25 | 11 | 36 | 11 |
|    | 13 | 41 | 13 | 55 | 14 | 07 | 14 | 20 | 14 | 35 |    |
|    | 16 | 35 | 16 | 51 | 17 | 06 | 17 | 20 | 17 | 36 |    |
|    | 19 | 28 | 19 | 48 | 20 | 05 | 20 | 21 | 20 | 32 |    |
| 2  | 22 | 31 | 22 | 53 | 23 | 13 | 23 | 30 | 23 | 51 | 10 |
|    | 25 | 35 | 26 | 00 | 26 | 23 | 26 | 42 | 27 | 04 |    |
|    | 28 | 48 | 29 | 15 | 29 | 39 | 29 | 59 | 30 | 23 |    |
|    | 32 | 08 | 32 | 39 | 33 | 04 | 33 | 26 | 33 | 51 |    |
| 3  | 35 | 41 | 36 | 11 | 36 | 37 | 37 | 00 | 37 | 27 | 9  |
|    | 39 | 18 | 39 | 51 | 40 | 18 | 40 | 41 | 41 | 10 |    |
|    | 43 | 07 | 43 | 38 | 44 | 06 | 44 | 30 | 44 | 58 |    |
|    | 47 | 04 | 47 | 36 | 48 | 04 | 48 | 28 | 48 | 54 |    |
| 4  | 51 | 11 | 51 | 42 | 52 | 08 | 52 | 32 | 52 | 58 | 8  |
|    | 55 | 31 | 56 | 00 | 56 | 26 | 56 | 48 | 57 | 13 |    |
|    | 59 | 59 | 60 | 20 | 60 | 50 | 61 | 10 | 61 | 33 |    |
|    | 64 | 41 | 65 | 06 | 65 | 27 | 65 | 45 | 66 | 05 |    |
| 5  | 69 | 30 | 69 | 50 | 70 | 08 | 70 | 23 | 70 | 41 | 7  |
|    | 74 | 30 | 74 | 47 | 75 | 01 | 75 | 12 | 75 | 26 |    |
|    | 79 | 36 | 79 | 46 | 79 | 57 | 80 | 05 | 80 | 14 |    |
|    | 84 | 47 | 84 | 53 | 84 | 57 | 84 | 58 | 85 | 02 |    |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

|    | 51 |    | 52 |    | 53 |    | 54 |    | 55 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 2  | 54 | 2  | 56 | 2  | 55 | 3  | 81 | 3  | 04 |    |
|    | 5  | 50 | 5  | 55 | 6  | 00 | 6  | 04 | 6  | 09 |    |
|    | 8  | 47 | 8  | 54 | 9  | 01 | 9  | 10 | 9  | 15 |    |
| 1  | 11 | 45 | 11 | 55 | 12 | 05 | 12 | 13 | 12 | 23 | 11 |
|    | 14 | 46 | 14 | 57 | 15 | 08 | 15 | 19 | 15 | 31 |    |
|    | 17 | 51 | 18 | 03 | 18 | 17 | 18 | 29 | 18 | 45 |    |
|    | 20 | 56 | 21 | 11 | 21 | 27 | 21 | 40 | 21 | 57 |    |
| 2  | 24 | 09 | 24 | 26 | 24 | 44 | 24 | 59 | 25 | 18 | 10 |
|    | 27 | 23 | 27 | 43 | 28 | 05 | 28 | 19 | 28 | 39 |    |
|    | 30 | 44 | 31 | 07 | 31 | 26 | 31 | 44 | 32 | 05 |    |
|    | 34 | 12 | 34 | 34 | 34 | 57 | 35 | 15 | 35 | 39 |    |
| 3  | 37 | 50 | 38 | 13 | 38 | 36 | 39 | 03 | 39 | 18 | 9  |
|    | 41 | 32 | 41 | 57 | 42 | 19 | 42 | 39 | 43 | 03 |    |
|    | 45 | 21 | 45 | 45 | 46 | 10 | 46 | 30 | 46 | 52 |    |
|    | 49 | 18 | 49 | 41 | 50 | 05 | 50 | 25 | 50 | 48 |    |
| 4  | 53 | 22 | 53 | 44 | 54 | 07 | 54 | 26 | 54 | 47 | 8  |
|    | 57 | 35 | 57 | 56 | 58 | 17 | 58 | 35 | 58 | 56 |    |
|    | 61 | 53 | 62 | 13 | 62 | 26 | 62 | 48 | 63 | 07 |    |
|    | 66 | 23 | 66 | 40 | 66 | 57 | 67 | 11 | 67 | 28 |    |
| 5  | 70 | 56 | 71 | 09 | 71 | 25 | 71 | 37 | 71 | 51 | 7  |
|    | 75 | 37 | 75 | 49 | 76 | 00 | 76 | 09 | 76 | 20 |    |
|    | 80 | 23 | 80 | 30 | 80 | 38 | 80 | 44 | 80 | 52 |    |
|    | 85 | 06 | 85 | 10 | 85 | 14 | 85 | 18 | 85 | 22 |    |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

|   | 56 |    | 57 |    | 58 |    | 59 |    | 60 |    |    |
|---|----|----|----|----|----|----|----|----|----|----|----|
| H | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H  |
|   | 3  | 07 | 3  | 08 | 3  | 10 | 3  | 12 | 3  | 14 |    |
|   | 6  | 13 | 6  | 18 | 6  | 22 | 6  | 28 | 6  | 30 |    |
|   | 9  | 21 | 9  | 27 | 9  | 34 | 9  | 43 | 9  | 46 |    |
| 1 | 12 | 32 | 12 | 39 | 12 | 49 | 13 | 00 | 13 | 04 | 1  |
|   | 15 | 42 | 15 | 52 | 16 | 02 | 16 | 16 | 16 | 22 |    |
|   | 18 | 57 | 19 | 08 | 19 | 21 | 19 | 38 | 19 | 44 |    |
|   | 22 | 12 | 22 | 24 | 22 | 38 | 22 | 58 | 23 | 04 |    |
| 2 | 25 | 33 | 25 | 49 | 26 | 04 | 26 | 26 | 26 | 32 | 10 |
|   | 28 | 56 | 29 | 12 | 29 | 29 | 29 | 53 | 30 | 01 |    |
|   | 32 | 23 | 32 | 41 | 32 | 59 | 33 | 24 | 33 | 31 |    |
|   | 35 | 59 | 36 | 16 | 36 | 34 | 37 | 00 | 37 | 10 |    |
| 3 | 39 | 38 | 40 | 00 | 40 | 17 | 40 | 44 | 40 | 51 | 9  |
|   | 43 | 23 | 43 | 42 | 44 | 02 | 44 | 30 | 44 | 39 |    |
|   | 47 | 12 | 47 | 33 | 47 | 52 | 48 | 18 | 48 | 28 |    |
|   | 51 | 08 | 51 | 27 | 51 | 45 | 52 | 12 | 52 | 22 |    |
| 4 | 55 | 06 | 55 | 25 | 55 | 43 | 56 | 09 | 56 | 16 | 8  |
|   | 59 | 14 | 59 | 31 | 59 | 48 | 60 | 12 | 60 | 20 |    |
|   | 63 | 23 | 63 | 39 | 63 | 55 | 64 | 17 | 64 | 23 |    |
|   | 67 | 42 | 67 | 56 | 68 | 10 | 68 | 29 | 68 | 30 |    |
| 5 | 72 | 02 | 72 | 14 | 72 | 25 | 72 | 41 | 72 | 46 | 7  |
|   | 76 | 29 | 76 | 35 | 76 | 47 | 76 | 59 | 77 | 03 |    |
|   | 80 | 58 | 81 | 04 | 81 | 10 | 81 | 18 | 81 | 21 |    |
|   | 85 | 28 | 85 | 31 | 85 | 34 | 85 | 39 | 85 | 40 |    |
| 6 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

|    | 61 |    | 62 |    | 63 |    | 64 |    | 65 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 3  | 16 | 3  | 18 | 3  | 20 | 3  | 22 | 3  | 24 |    |
|    | 6  | 33 | 6  | 37 | 6  | 41 | 6  | 44 | 6  | 48 |    |
|    | 9  | 51 | 9  | 56 | 10 | 02 | 10 | 07 | 10 | 12 |    |
| 1  | 13 | 10 | 13 | 17 | 13 | 24 | 13 | 32 | 13 | 39 | 11 |
|    | 16 | 30 | 16 | 38 | 16 | 47 | 16 | 55 | 17 | 04 |    |
|    | 19 | 53 | 20 | 03 | 20 | 12 | 20 | 24 | 20 | 34 |    |
|    | 23 | 15 | 23 | 27 | 23 | 38 | 23 | 50 | 24 | 02 |    |
| 2  | 26 | 45 | 26 | 58 | 27 | 11 | 27 | 23 | 27 | 36 | 10 |
|    | 30 | 14 | 30 | 28 | 30 | 41 | 30 | 55 | 31 | 09 |    |
|    | 33 | 46 | 34 | 01 | 34 | 15 | 34 | 30 | 44 | 48 |    |
|    | 37 | 25 | 37 | 39 | 37 | 55 | 38 | 10 | 38 | 25 |    |
| 3  | 41 | 08 | 41 | 23 | 41 | 39 | 41 | 55 | 42 | 11 | 9  |
|    | 44 | 54 | 45 | 09 | 45 | 25 | 45 | 41 | 45 | 57 |    |
|    | 48 | 42 | 48 | 58 | 49 | 14 | 49 | 30 | 49 | 45 |    |
|    | 52 | 35 | 52 | 51 | 53 | 06 | 53 | 22 | 53 | 30 |    |
| 4  | 56 | 31 | 56 | 45 | 57 | 00 | 57 | 15 | 57 | 30 | 8  |
|    | 60 | 33 | 60 | 46 | 61 | 00 | 61 | 13 | 61 | 26 |    |
|    | 64 | 35 | 64 | 47 | 65 | 00 | 65 | 12 | 65 | 24 |    |
|    | 68 | 45 | 68 | 56 | 69 | 06 | 69 | 17 | 69 | 27 |    |
| 5  | 72 | 55 | 73 | 03 | 73 | 12 | 73 | 21 | 73 | 30 | 7  |
|    | 77 | 10 | 77 | 17 | 77 | 13 | 77 | 30 | 77 | 37 |    |
|    | 81 | 25 | 81 | 30 | 81 | 35 | 81 | 39 | 81 | 44 |    |
|    | 85 | 42 | 85 | 45 | 85 | 47 | 85 | 49 | 85 | 52 |    |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |



| 66 |    | 67 |    | 68 |    | 69 |    | 70 |    |
|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | H. | D. | M. | H. | D. |
| 3  | 25 | 3  | 26 | 3  | 28 | 3  | 29 | 3  | 30 |
| 6  | 51 | 6  | 55 | 6  | 57 | 7  | 00 | 7  | 02 |
| 10 | 17 | 10 | 22 | 10 | 26 | 10 | 29 | 10 | 34 |
| 1  | 13 | 45 | 13 | 52 | 14 | 03 | 14 | 07 | 14 |
| 17 | 11 | 17 | 20 | 17 | 27 | 17 | 33 | 17 | 38 |
| 20 | 40 | 20 | 52 | 21 | 00 | 21 | 09 | 21 | 14 |
| 24 | 11 | 24 | 22 | 24 | 31 | 24 | 40 | 24 | 46 |
| 2  | 27 | 46 | 27 | 59 | 28 | 09 | 28 | 19 | 28 |
| 3  | 21 | 34 | 34 | 31 | 45 | 31 | 56 | 32 | 03 |
| 34 | 56 | 35 | 11 | 35 | 22 | 35 | 33 | 35 | 41 |
| 38 | 37 | 38 | 52 | 39 | 04 | 39 | 16 | 39 | 23 |
| 3  | 42 | 32 | 42 | 38 | 42 | 50 | 43 | 02 | 43 |
| 46 | 09 | 46 | 25 | 46 | 36 | 46 | 48 | 46 | 57 |
| 49 | 58 | 50 | 11 | 50 | 25 | 50 | 36 | 50 | 44 |
| 53 | 48 | 54 | 02 | 54 | 15 | 54 | 26 | 54 | 34 |
| 4  | 42 | 41 | 57 | 54 | 58 | 05 | 58 | 15 | 58 |
| 61 | 36 | 61 | 50 | 61 | 59 | 62 | 09 | 62 | 16 |
| 65 | 34 | 65 | 45 | 65 | 53 | 66 | 02 | 66 | 08 |
| 69 | 35 | 69 | 45 | 69 | 53 | 70 | 01 | 70 | 06 |
| 5  | 73 | 36 | 73 | 44 | 73 | 51 | 73 | 57 | 74 |
| 77 | 42 | 77 | 48 | 77 | 53 | 77 | 58 | 78 | 01 |
| 81 | 47 | 81 | 51 | 81 | 55 | 81 | 58 | 82 | 00 |
| 85 | 53 | 85 | 55 | 85 | 58 | 86 | 59 | 86 | 00 |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 |

|    | 71 |    | 72 |    | 73 |    | 74 |    | 75 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 3  | 32 | 3  | 34 | 3  | 35 | 3  | 36 | 3  | 36 |    |
|    | 7  | 05 | 7  | 08 | 7  | 10 | 7  | 12 | 7  | 14 |    |
|    | 10 | 38 | 10 | 42 | 10 | 45 | 10 | 48 | 10 | 51 |    |
| 1  | 14 | 18 | 14 | 23 | 14 | 26 | 14 | 29 | 14 | 33 | 11 |
|    | 17 | 46 | 17 | 52 | 17 | 56 | 18 | 01 | 18 | 06 |    |
|    | 21 | 22 | 21 | 30 | 21 | 36 | 21 | 41 | 21 | 46 |    |
|    | 24 | 59 | 25 | 05 | 25 | 11 | 25 | 17 | 25 | 23 |    |
| 2  | 28 | 36 | 28 | 46 | 28 | 53 | 28 | 59 | 29 | 06 | 10 |
|    | 32 | 13 | 32 | 24 | 32 | 31 | 32 | 38 | 32 | 45 |    |
|    | 35 | 52 | 36 | 03 | 36 | 11 | 36 | 18 | 36 | 26 |    |
|    | 39 | 55 | 39 | 47 | 39 | 54 | 40 | 02 | 40 | 10 |    |
| 3  | 43 | 22 | 43 | 33 | 43 | 41 | 43 | 49 | 43 | 57 | 9  |
|    | 47 | 08 | 47 | 20 | 47 | 28 | 47 | 36 | 47 | 44 |    |
|    | 50 | 55 | 51 | 07 | 51 | 15 | 51 | 23 | 51 | 31 |    |
|    | 54 | 45 | 54 | 54 | 55 | 01 | 55 | 09 | 55 | 16 |    |
| 4  | 58 | 32 | 58 | 52 | 58 | 49 | 58 | 56 | 59 | 03 | 8  |
|    | 62 | 26 | 62 | 35 | 62 | 42 | 62 | 48 | 62 | 55 |    |
|    | 66 | 18 | 66 | 26 | 66 | 31 | 66 | 37 | 66 | 43 |    |
|    | 70 | 13 | 70 | 21 | 70 | 26 | 70 | 31 | 70 | 36 |    |
| 5  | 74 | 08 | 74 | 14 | 74 | 18 | 74 | 22 | 74 | 26 | 7  |
|    | 78 | 06 | 78 | 08 | 78 | 14 | 78 | 17 | 78 | 20 |    |
|    | 82 | 04 | 82 | 07 | 82 | 09 | 82 | 11 | 82 | 13 |    |
|    | 86 | 01 | 86 | 03 | 86 | 05 | 86 | 06 | 86 | 07 |    |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

|    | 76 | 77 | 78 | 79 | 80 |    |
|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | N. |
|    | 3  | 37 | 3  | 38 | 3  | 39 |
|    | 7  | 16 | 7  | 18 | 7  | 20 |
|    | 10 | 54 | 10 | 57 | 11 | 00 |
| 1  | 14 | 37 | 14 | 41 | 14 | 44 |
|    | 18 | 11 | 18 | 16 | 18 | 21 |
|    | 21 | 52 | 21 | 57 | 22 | 03 |
|    | 25 | 29 | 25 | 35 | 25 | 41 |
| 2  | 29 | 13 | 29 | 19 | 29 | 26 |
|    | 32 | 52 | 33 | 00 | 33 | 07 |
|    | 36 | 33 | 36 | 49 | 36 | 52 |
|    | 40 | 18 | 40 | 26 | 40 | 33 |
| 3  | 44 | 05 | 44 | 13 | 44 | 21 |
|    | 47 | 51 | 47 | 59 | 48 | 07 |
|    | 51 | 38 | 51 | 45 | 51 | 53 |
|    | 55 | 24 | 55 | 31 | 55 | 42 |
| 4  | 59 | 10 | 59 | 17 | 59 | 24 |
|    | 63 | 01 | 63 | 07 | 63 | 14 |
|    | 66 | 49 | 66 | 54 | 67 | 00 |
|    | 70 | 41 | 70 | 46 | 70 | 51 |
| 5  | 74 | 30 | 74 | 35 | 74 | 39 |
|    | 78 | 23 | 78 | 27 | 78 | 30 |
|    | 82 | 15 | 82 | 17 | 82 | 20 |
|    | 86 | 08 | 86 | 10 | 86 | 11 |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 |

H

|    | 81 |    | 82 |    | 83 |    | 84 |    | 85 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 3  | 41 | 3  | 42 | 3  | 43 | 3  | 44 | 3  | 45 |    |
|    | 7  | 24 | 7  | 25 | 7  | 26 | 7  | 27 | 7  | 28 |    |
|    | 11 | 06 | 11 | 07 | 11 | 09 | 11 | 10 | 11 | 11 |    |
| 7  | 14 | 53 | 14 | 55 | 14 | 55 | 14 | 56 | 14 | 58 | 11 |
|    | 18 | 31 | 18 | 33 | 18 | 34 | 18 | 36 | 18 | 39 |    |
|    | 22 | 15 | 22 | 17 | 22 | 19 | 22 | 21 | 22 | 24 |    |
|    | 25 | 54 | 25 | 57 | 26 | 00 | 26 | 03 | 26 | 06 |    |
| 2  | 29 | 41 | 26 | 44 | 29 | 46 | 29 | 49 | 29 | 52 | 10 |
|    | 33 | 23 | 33 | 26 | 33 | 28 | 33 | 31 | 33 | 35 |    |
|    | 37 | 08 | 37 | 11 | 37 | 15 | 37 | 19 | 37 | 20 |    |
|    | 40 | 44 | 40 | 53 | 40 | 57 | 40 | 59 | 41 | 05 |    |
| 3  | 44 | 37 | 44 | 41 | 44 | 45 | 44 | 49 | 44 | 53 | 9  |
|    | 48 | 23 | 48 | 27 | 48 | 31 | 48 | 35 | 48 | 39 |    |
|    | 52 | 09 | 52 | 12 | 52 | 16 | 52 | 20 | 52 | 24 |    |
|    | 55 | 57 | 56 | 00 | 56 | 04 | 56 | 08 | 56 | 09 |    |
| 4  | 59 | 38 | 59 | 41 | 59 | 45 | 59 | 48 | 59 | 52 | 8  |
|    | 63 | 27 | 63 | 30 | 63 | 33 | 63 | 36 | 63 | 39 |    |
|    | 67 | 11 | 67 | 14 | 67 | 17 | 67 | 20 | 67 | 23 |    |
|    | 71 | 00 | 71 | 03 | 71 | 05 | 71 | 08 | 71 | 09 |    |
| 5  | 74 | 47 | 74 | 49 | 74 | 51 | 74 | 53 | 74 | 55 | 7  |
|    | 78 | 36 | 78 | 37 | 78 | 40 | 78 | 41 | 78 | 41 |    |
|    | 82 | 24 | 82 | 25 | 82 | 26 | 82 | 27 | 82 | 28 |    |
|    | 86 | 13 | 86 | 13 | 86 | 14 | 86 | 15 | 86 | 15 |    |
| 6  | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

|    | 86 |    | 87 |    | 88 |    | 89 |    | 90 |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| H. | D. | M. | D. | M. | D. | M. | D. | M. | D. | M. | H. |
|    | 3  | 45 | 3  | 45 | 3  | 45 | 3  | 45 | 3  | 45 |    |
|    | 7  | 29 | 7  | 30 | 7  | 31 | 7  | 32 | 7  | 33 |    |
|    | 11 | 12 | 11 | 13 | 11 | 13 | 11 | 13 | 11 | 13 |    |
|    | 14 | 59 | 15 | 00 | 15 | 01 | 15 | 01 | 15 | 01 | 11 |
|    | 18 | 40 | 18 | 41 | 18 | 42 | 18 | 43 | 18 | 43 |    |
|    | 22 | 27 | 22 | 28 | 22 | 29 | 22 | 29 | 22 | 29 |    |
|    | 26 | 07 | 26 | 07 | 26 | 10 | 26 | 11 | 26 | 12 |    |
|    | 29 | 54 | 29 | 56 | 29 | 57 | 29 | 58 | 29 | 58 | 10 |
|    | 33 | 37 | 33 | 39 | 33 | 40 | 33 | 41 | 33 | 41 |    |
|    | 37 | 23 | 37 | 24 | 37 | 25 | 37 | 26 | 37 | 26 |    |
|    | 41 | 06 | 41 | 08 | 41 | 09 | 41 | 10 | 41 | 11 |    |
|    | 44 | 55 | 44 | 57 | 44 | 58 | 44 | 59 | 45 | 00 | 9  |
|    | 48 | 41 | 48 | 42 | 48 | 43 | 48 | 44 | 48 | 44 |    |
|    | 52 | 26 | 52 | 27 | 52 | 28 | 52 | 29 | 52 | 29 |    |
|    | 56 | 11 | 56 | 12 | 56 | 13 | 56 | 14 | 56 | 14 |    |
|    | 59 | 53 | 59 | 54 | 59 | 55 | 59 | 56 | 59 | 57 | 8  |
|    | 63 | 40 | 63 | 42 | 63 | 43 | 63 | 44 | 63 | 44 |    |
|    | 67 | 24 | 67 | 26 | 67 | 26 | 67 | 28 | 67 | 27 |    |
|    | 71 | 10 | 71 | 13 | 71 | 14 | 71 | 15 | 71 | 16 |    |
|    | 74 | 56 | 74 | 57 | 74 | 58 | 74 | 59 | 74 | 59 | 7  |
|    | 78 | 43 | 78 | 44 | 78 | 44 | 78 | 46 | 78 | 44 |    |
|    | 82 | 29 | 82 | 30 | 82 | 30 | 82 | 31 | 82 | 30 |    |
|    | 86 | 15 | 86 | 15 | 86 | 15 | 86 | 15 | 86 | 15 |    |
|    | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 90 | 00 | 6  |

# Canons for Dialing by the Artificial Sines and Tangents.

## 1. For the Inclination of Meridians.

**A**s the Sine of the Latitude is to the Sine of 90,  
So is the Tangent of the Declination to the  
Tangent of the Inclination of Meridian.

## 2. For the Stiles Elevation.

As the Sine of 90 is to the Co-sine of the Declination,  
So is the Co-sine of the Latitude to the Sine of the  
Stiles Elevation.

## 3. For the Distance of the Substile from the Meridian.

As the Sine of 90 is to the Sine of the Declination,  
So is the Tangent of the Latitude to the Tangent of  
the Substile from 12.

## 4. For Angle between 12 and 6.

As the Co-tangent of the Latitude is to the Sine  
of 90,  
So is the Sine of the Declination to the Co-tangent  
of the Angle from 12 to 6.

## 5. For the Hours.

As the Sine of 90 is to the Sine of the Stiles height,  
So is the Tangent of the Hours Angle at the Pole,  
to the Tangent of the Hour from the Substile at the  
Pole.



*An Account of the Declinations, Reclinations, and Inclinations; with Tables Calculated for Drawing Dials upon all the Planes of the Five Platonick Bodies, viz. 1. Tetrahedron. 2. The Cube or Hexahedron. 3. The Octohedron. 4. The Dodecahedron. And 5. The Icosahedron.*

### *1. Of the Tetrahedron.*

**T**HE Tetrahedron is a Body Comprahended of four Equilateral plain Triangles, or Triangular Pyramids; one of the sides being made the Base, the three other doth recline from the Zenith 19 deg. 28 min. 18 sec.

When one of the sides is placed due South, then the Plane is become a South Recliner, reclining 19 deg. 28 min. 18 sec.

And the other two are North Declining Reclining Planes, declining from the North Eastward and Westward 60 deg. reclining each 19 deg. 28 min. 18 sec.

When one of the sides is posited due North, then that Plane is a North Recliner, Reclining 19 deg. 28 min. 18 sec.

And the other two becomes South Declining Reclining Planes; declining from the South Eastward and Westward 60 deg. reclining each as before.

And when one side is turned to the East, that Plane will be an East Reclining Plane, Reclining as before.

And the other two will be two Declining Reclining Planes, one Declining from the South Westward, and the other from the North Westward 60 deg. each Reclining as before.

Again,



Again, when one side is placed due West, then that Plane will be a West Recliner 19 deg. 28 min. 18 sec.

And the other two will Decline from the North and South 60 deg. Eastward, and the Reclinations the same as before.

The most usual way of placing the *Tetrahedron*, is in putting one side due North, Reclining 19 deg. 28 min. 18 sec. and the other two sides with the South Declining 60 deg. Eastward and Westward, and will Recline as the former.

N<sup>o</sup> Reclining 19 d. 28 m. 18 s  
add the Co-sine Lat, 38, 28, 00,

the Stiles height 57, 56, 18,

Hours from the Hour Arches on  
Meridian. the Plane.

|               |   |    |    |
|---------------|---|----|----|
| 12            |   | 00 | 00 |
| $\frac{1}{2}$ |   | 06 | 22 |
| 11            | 1 | 12 | 48 |
| $\frac{1}{2}$ |   | 19 | 21 |
| 10            | 2 | 26 | 04 |
| $\frac{1}{2}$ |   | 33 | 02 |
| 9             | 3 | 40 | 17 |
| $\frac{1}{2}$ |   | 47 | 50 |
| 8             | 4 | 55 | 44 |
| $\frac{1}{2}$ |   | 63 | 57 |
| 7             | 5 | 72 | 27 |
| $\frac{1}{2}$ |   | 81 | 10 |
| 6             | 6 | 90 | 00 |

The other two South Declining Reclining have the same Dial serving for both, only changing the position of the Substile and Hours.

The Requisites and Hour distances are as followeth.

|                                                 | d. m. sec. |
|-------------------------------------------------|------------|
| The Planes Reclinations ——— ——— ———             | 19 28 18   |
| The Planes Declination ——— ——— ———              | 60 00 00   |
| The Arch between Merid. and Hor. ——— ——— ———    | 60 00 00   |
| The height of the Stile ——— ——— ———             | 01 50 53   |
| The Substiles dist. from the Merid. ——— ——— ——— | 02 36 56   |
| The Planes Difference of Longitude ——— ——— ———  | 54 46 43   |

Therefore the Substile falleth between 8 and 9 of the Clock in the East, and between 4 and 3 in the West.

| Hours from<br>the Substile. | Hour Arch<br>on the Plane | Hours from<br>the Substile |
|-----------------------------|---------------------------|----------------------------|
| 3                           | 10 36                     | 9                          |
| $3\frac{1}{2}$              | 05 56                     | $8\frac{1}{2}$             |
| 4                           | 04 00                     | 8                          |
| $4\frac{1}{2}$              | 02 55                     | $7\frac{1}{2}$             |
| 5                           | 02 13                     | 7                          |
| $5\frac{1}{2}$              | 01 42                     | $6\frac{1}{2}$             |
| 6                           | 01 18                     | 6                          |
| $6\frac{1}{2}$              | 00 58                     | $5\frac{1}{2}$             |
| 7                           | 00 41                     | 5                          |
| $7\frac{1}{2}$              | 00 25                     | $4\frac{1}{2}$             |
| 8                           | 00 10                     | 4                          |

Substile

| Substile      |       | Substile      |
|---------------|-------|---------------|
| $\frac{1}{4}$ | 00 04 | $\frac{1}{4}$ |
| 9             | 00 19 | 2             |
| $\frac{1}{2}$ | 00 34 | $\frac{1}{2}$ |
| 10            | 00 52 | 2             |
| $\frac{3}{4}$ | 01 10 | $\frac{3}{4}$ |
| 11            | 01 32 | 1             |
| $\frac{1}{2}$ | 02 00 | $\frac{1}{2}$ |
| 12            | 02 37 | 12            |
| $\frac{1}{2}$ | 03 31 | $\frac{1}{2}$ |
| 1             | 05 00 | 11            |
| $\frac{1}{2}$ | 08 08 | $\frac{1}{2}$ |
| 2             | 19 26 | 10            |

### of the Cube or Hexahedron.

**T**HE *Cube* or *Hexahedron* is a Body comprehended under six sides, which are each of them Geometrical Squares; one of them being made the Base, the other five sides are improvable for several sorts of Dials.

Upon the upper Face may be described a Horizontal Dial for any Latitude.

And on the other four sides may be drawn a North, South, East and West Dial.

And if you turn the edges of the Cube to respect the four Cardinal Points, then each Plane will decline from the North or South 45 Degrees to the East and West,

*Of the Octohedron.*

**T**HE *Octohedron* is a Body comprehended under eight Equilateral Triangles; one of them being made the Base, on the other seven sides may be delineated several Dials.

Upon the upper Face may be described a Horizontal Dial.

Upon two other sides of the Body, one is a South Recliner, and the other a North Incliner, Reclining and Inclining 19 deg. 28 min. 18 sec. as in the *Tetrahedron*.

*The other four Planes are thus qualified.*

Two North and two South, declining 60 deg. from North and South; Reclining and Inclining as in the former 19 deg. 28 min. 18 sec. the Dial being one and the same as in the *Tetrahedron*; there will not be any need to reiterate the Work over again.

*Of the Dodecahedron.*

**T**HE *Dodecahedron* is a Body contained under 12 Pentagonal Pyramids, whose Planes hath five equal sides.

*The Declination, Reclination, and Inclination, with Tables for drawing the Dials on all the Pentagonal Planes, are as followeth.*

1. The Body being placed on one of its sides as a Base, the opposite thereto is a Horizontal Dial.
2. Then have you one North Plane Reclining 26 d. 33 min. 54 sec. and one South Inclining as much.

3. You

( 87 )

3. You have two North Planes Declining 72 deg. and Reclining 26 deg. 33 min. 54 sec. and two South Declining and Reclining as before.

You have two North, Declining 36 deg. and Inclining 26 deg. 33 min. 54 sec. and two South Declining and Reclining as before; which now furnisheth all the 12 sides of this Body.

|                                     | d. m. sec. |
|-------------------------------------|------------|
| The North Reclining Plane —————     | 26 33 54   |
| The Co-sine of the Latitude add ——— | 38 28 00   |
| <hr/>                               |            |
| The height of the Scile —————       | 65 01 54   |

| Hours from<br>the Meridian | Hour Arch<br>on the Plane | Hours from<br>the Meridian |
|----------------------------|---------------------------|----------------------------|
| 12                         | 00 00                     | 12                         |
| $\frac{1}{2}$              | 06 40                     | $\frac{1}{2}$              |
| 11                         | 13 39                     | 01                         |
| $\frac{1}{2}$              | 20 35                     | $\frac{1}{2}$              |
| 10                         | 27 28                     | 02                         |
| $\frac{1}{2}$              | 34 49                     | $\frac{1}{2}$              |
| 09                         | 42 12                     | 03                         |
| $\frac{1}{2}$              | 49 45                     | $\frac{1}{2}$              |
| 08                         | 57 30                     | 04                         |
| $\frac{1}{2}$              | 65 00                     | $\frac{1}{2}$              |
| 07                         | 73 32                     | 05                         |
| $\frac{1}{2}$              | 81 44                     | $\frac{1}{2}$              |
| 06                         | 90 00                     | 06                         |

NOV 22

12

The

The two North Recliners, and their opposites, Declining 72 deg. have the same Dial serving for all four, only changing the Position of the Style and Hours.

|                                | d. m. sec. |
|--------------------------------|------------|
| North Reclining                | 26 33 34   |
| Declining East and West        | 72 00 00   |
| Dist. of Merid. and Hor.       | 36 00 00   |
| Subfiles Dist. from the Merid. | 82 04 40   |
| The Planes Difference of Long. | 83 50 41   |
| Styles height                  | 31 28 20   |

The Hour-Arches as followeth.

| Hours from<br>the Subfile | Hour Arch<br>on the Plane | Hours from<br>the Subfile |
|---------------------------|---------------------------|---------------------------|
| 12                        | 82 05                     | 12                        |
| $\frac{1}{2}$             | 68 26                     | $\frac{1}{2}$             |
| 11                        | 56 22                     | 01                        |
| $\frac{1}{2}$             | 46 08                     | $\frac{1}{2}$             |
| 10                        | 37 35                     | 02                        |
| $\frac{1}{2}$             | 30 25                     | $\frac{1}{2}$             |
| 09                        | 24 18                     | 03                        |
| $\frac{1}{2}$             | 18 58                     | $\frac{1}{2}$             |
| 08                        | 14 12                     | 04                        |
| $\frac{1}{2}$             | 09 49                     | $\frac{1}{2}$             |
| 07                        | 05 43                     | 05                        |
| $\frac{1}{2}$             | 01 42                     | $\frac{1}{2}$             |

Subfile

| Substile         |       |                  |
|------------------|-------|------------------|
| 06 $\frac{1}{2}$ | 02 10 | 06 $\frac{1}{2}$ |
| 05 $\frac{1}{2}$ | 06 09 | 07 $\frac{1}{2}$ |
| 04 $\frac{1}{2}$ | 10 17 | 08 $\frac{1}{2}$ |
| 03 $\frac{1}{2}$ | 14 41 | 09 $\frac{1}{2}$ |
| 02 $\frac{1}{2}$ | 19 30 | 10 $\frac{1}{2}$ |
| 01 $\frac{1}{2}$ | 24 55 | 11 $\frac{1}{2}$ |
|                  | 31 07 |                  |
|                  | 38 26 |                  |
|                  | 47 09 |                  |
|                  | 57 35 |                  |
|                  | 69 51 |                  |
|                  | 83 37 |                  |

The two South Recliners, and their opposites, Declining 36 deg. have also the same Dials serving for all four, with the former Cautions.

|                                 | d. m. sec. |
|---------------------------------|------------|
| South Reclining                 | 26 33 54   |
| Declining East and West         | 36 00 00   |
| Dist. of Merid. and Horizon     | 72 00 00   |
| Substiles Dist. from the Merid. | 03 33 36   |
| The Planes Diff. of Longitude   | 31 53 40   |
| The Styles height               | 05 44 15   |

( 70 )

| Hours from<br>the Substile | Hour Arch<br>on the Plane | Hours from<br>the Substile |
|----------------------------|---------------------------|----------------------------|
| 04<br>$\frac{1}{2}$        | 71 42                     | 08                         |
| 05<br>$\frac{1}{2}$        | 31 09                     | $\frac{1}{2}$              |
| 06<br>$\frac{1}{2}$        | 18 13                     | 07<br>$\frac{1}{2}$        |
| 07<br>$\frac{1}{2}$        | 12 26                     | 06<br>$\frac{1}{2}$        |
| 08<br>$\frac{1}{2}$        | 09 07                     | 05<br>$\frac{1}{2}$        |
| 09<br>$\frac{1}{2}$        | 06 56                     | 04<br>$\frac{1}{2}$        |
| 10<br>$\frac{1}{2}$        | 05 21                     | 03<br>$\frac{1}{2}$        |
| 11<br>$\frac{1}{2}$        | 04 06                     | 02<br>$\frac{1}{2}$        |
| 12<br>$\frac{1}{2}$        | 03 03                     | 01<br>$\frac{1}{2}$        |
| 01<br>$\frac{1}{2}$        | 02 09                     | 00<br>$\frac{1}{2}$        |
| 02<br>$\frac{1}{2}$        | 01 20                     | 00 11                      |
| 03<br>$\frac{1}{2}$        | 00 34                     | 00 57                      |
| 04<br>$\frac{1}{2}$        | Substile                  | 01 44                      |
| 05<br>$\frac{1}{2}$        | 00 11                     | 02 36                      |
| 06<br>$\frac{1}{2}$        | 00 57                     | 03 34                      |
| 07<br>$\frac{1}{2}$        | 01 44                     | 04 41                      |
| 08<br>$\frac{1}{2}$        | 02 36                     | 06 06                      |
| 09<br>$\frac{1}{2}$        | 03 34                     | 07 57                      |
| 10<br>$\frac{1}{2}$        | 04 41                     | 10 36                      |
| 11<br>$\frac{1}{2}$        | 06 06                     | 14 53                      |
| 12<br>$\frac{1}{2}$        | 07 57                     | 23 15                      |
| 01<br>$\frac{1}{2}$        | 10 36                     | 45 32                      |
| 02<br>$\frac{1}{2}$        | 14 53                     |                            |
| 03<br>$\frac{1}{2}$        | 23 15                     |                            |
| 04<br>$\frac{1}{2}$        | 45 32                     |                            |



## Of the Icosahedron.

**T**he *Icosahedron* is a Body consisting of 20 Triangular Pyramids. each Plane being an Equilateral Triangle, one of which being made the Base, the opposite side is a Horizontal Plane.

The Reclination of the three adjacent Planes to the Horizontal Triangle, is 48 deg. 11 min. 23 sec. from the Zenith, and when one Corner stands South, that Plane opposite to it is a direct North Plane, the other two Decline 60 deg. one South-East, and the other South-West.

The other six below these three, do all Recline 19 deg. 28 min. 16 sec. the two that behold the South, Decline 22 deg. 14 min. 29 sec. and those two that behold the North, Decline 37 deg. 45 min. 51 sec. towards the East and West; the other two remaining, Recline as before, and Decline one North-East, and the other North-West 82 deg. 14 min. 19 sec.

The other nine under Planes, opposite to every one of these, Decline and Incline as much as the opposite did Decline or Recline, as by due Consideration will plainly appear.

That which is observable in these five *Platonic Bodies*, is that their Sides and Angles are all equal on each respective Body, which cannot be said of any other.

|                                 | d. | m. | sec. |
|---------------------------------|----|----|------|
| The North Reclining Plane       | 48 | 11 | 23   |
| The Co sine of the Latitude add | 38 | 28 | 00   |
| Styl'es height                  | 56 | 39 | 23   |

| Hours from the Hour Arches on the Meridian. | the Plane. |    | Hours from the Meridian |
|---------------------------------------------|------------|----|-------------------------|
| 12                                          | 00         | 00 | 12                      |
| $\frac{1}{2}$                               | 07         | 29 | $\frac{1}{2}$           |
| 11                                          | 14         | 59 | 01                      |
| $\frac{1}{2}$                               | 22         | 28 | $\frac{1}{2}$           |
| 10                                          | 29         | 57 | 02                      |
| $\frac{1}{2}$                               | 37         | 27 | $\frac{1}{2}$           |
| 09                                          | 44         | 57 | 03                      |
| $\frac{1}{2}$                               | 52         | 27 | $\frac{1}{2}$           |
| 08                                          | 59         | 57 | 04                      |
| $\frac{1}{2}$                               | 67         | 28 | $\frac{1}{2}$           |
| 07                                          | 74         | 59 | 05                      |
| $\frac{1}{2}$                               | 82         | 29 | $\frac{1}{2}$           |
| 06                                          | 90         | 00 | 06                      |

The other two South Reclining as much, and Declining 60 deg. have the same Dial for both, changing the Position of the Substile and Hours as before directed, the particulars whereof, with the Hour-distance from the Substile, are as followeth.

|                                     |            |
|-------------------------------------|------------|
|                                     | d. m. sec. |
| South Reclining                     | 48 11 23   |
| Declining East and West             | 60 00 00   |
| The Dist. of Merid. and Hor.        | 37 45 41   |
| The Substiles Dist. from the Merid. | 16 41 31   |
| The Planes Difference of Longitude  | 38 32 50   |
| The Styles height                   | 32 06 03   |

The Hour Arches on the Plane, are as in the following Table.

| Hours<br>from<br>the<br>Subst. | Hour Ar-<br>ches. | Hours<br>from<br>the<br>Subst. | Hours<br>from<br>the<br>Subst. | Hour Ar-<br>ches. | Hours<br>from<br>the<br>Subst. |    |               |
|--------------------------------|-------------------|--------------------------------|--------------------------------|-------------------|--------------------------------|----|---------------|
| Substile                       |                   |                                | Substile                       |                   |                                |    |               |
| $\frac{1}{2}$                  | 00                | 24                             | $\frac{1}{2}$                  | 09                | 02 26                          | 03 |               |
| 10                             | 03                | 14                             | 02                             | $\frac{1}{2}$     | 05                             | 20 | $\frac{1}{2}$ |
| $\frac{1}{2}$                  | 06                | 11                             | $\frac{1}{2}$                  | 08                | 08                             | 25 | 04            |
| 11                             | 09                | 19                             | 01                             | $\frac{1}{2}$     | 11                             | 45 | $\frac{1}{2}$ |
| $\frac{1}{2}$                  | 12                | 46                             | $\frac{1}{2}$                  | 07                | 15                             | 32 | 05            |
| 12                             | 16                | 42                             | 12                             | $\frac{1}{2}$     | 19                             | 56 | $\frac{1}{2}$ |
| $\frac{1}{2}$                  | 21                | 19                             | $\frac{1}{2}$                  | 06                | 25                             | 17 | 06            |
| 01                             | 27                | 00                             | 11                             | $\frac{1}{2}$     | 32                             | 00 | $\frac{1}{2}$ |
| $\frac{1}{2}$                  | 34                | 13                             | $\frac{1}{2}$                  | 05                | 40                             | 48 | 07            |
| 02                             | 43                | 45                             | 10                             | $\frac{1}{2}$     | 52                             | 36 | $\frac{1}{2}$ |
| $\frac{1}{2}$                  | 56                | 34                             | $\frac{1}{2}$                  | 04                | 68                             | 13 | 08            |
| 03                             | 73                | 16                             | 00                             | $\frac{1}{2}$     | 87                             | 12 | $\frac{1}{2}$ |

The two South Planes Reclining 19 deg. 28 min. 16 sec. do also Decline 22 deg. 14 min. 19 sec. the particulars whereof are as followeth.

|                                    |            |
|------------------------------------|------------|
|                                    | d. m. sec. |
| South Reclining                    | 19 28 16   |
| Declining East and West            | 22 14 19   |
| Distance of the Meridian and Hor.  | 82 14 19   |
| Substiles Dist. from the Merid.    | 06 26 34   |
| The Planes Difference of Longitude | 21 49 56   |
| Styles height                      | 16 21 19   |

The Hour Arches are as in the following Table.

K

Hour

| Hours<br>from<br>the<br>Subst. | Hour Ar-<br>ches. | Hours<br>from<br>the<br>Subst. | Hours<br>from<br>the<br>Subst. | Hour Ar-<br>ches | Hours<br>from<br>the<br>Subst. |
|--------------------------------|-------------------|--------------------------------|--------------------------------|------------------|--------------------------------|
|                                | Substile          |                                |                                | Substile         |                                |
| 11                             | 01 56             | 01                             | $\frac{1}{2}$                  | 00 11            | $\frac{1}{2}$                  |
| $\frac{1}{2}$                  | 04 07             | $\frac{1}{2}$                  | 10                             | 02 19            | 02                             |
| 12                             | 06 27             | 12                             | $\frac{1}{2}$                  | 04 32            | $\frac{1}{2}$                  |
| $\frac{1}{2}$                  | 09 00             | $\frac{1}{2}$                  | 09                             | 06 53            | 03                             |
| 01                             | 11 55             | 11                             | $\frac{1}{2}$                  | 09 26            | $\frac{1}{2}$                  |
| $\frac{1}{2}$                  | 15 24             | $\frac{1}{2}$                  | 08                             | 12 30            | 04                             |
| 02                             | 19 44             | 10                             | $\frac{1}{2}$                  | 16 06            | $\frac{1}{2}$                  |
| $\frac{1}{2}$                  | 25 26             | $\frac{1}{2}$                  | 07                             | 20 37            | 05                             |
| 03                             | 33 22             | 09                             | $\frac{1}{2}$                  | 26 38            | $\frac{1}{2}$                  |
| $\frac{1}{2}$                  | 45 09             | $\frac{1}{2}$                  | 06                             | 35 08            | 06                             |
| 04                             | 63 08             | 08                             | $\frac{1}{2}$                  | 47 49            | $\frac{1}{2}$                  |
| $\frac{1}{2}$                  | 87 37             | $\frac{1}{2}$                  | 05                             | 66 58            | 07                             |

The two middle Planes North Reclining as much,  
and do also Decline 82 deg. 14 min. 19 sec. the par-  
ticulars are as followeth.

|                                 | d. m. sec. |
|---------------------------------|------------|
| North Reclining                 | 19 28 16   |
| Declining East and West         | 82 14 19   |
| Dist. of Merid. and Horizon     | 23 14 19   |
| Substiles Dist. from the Merid. | 71 17 00   |
| The Planes Dist. of Longitude   | 83 24 34   |
| The Styles height               | 19 53 19   |

The Table of Hour Arches are as followeth.

Hours

| Hours<br>from<br>the<br>Subst. | Hour Ar.<br>ches. | Hours<br>from<br>the<br>Subst. | Hours<br>from<br>the<br>Subst. | Hour Ar.<br>ches. | Hours<br>from<br>the<br>Subst. |    |               |
|--------------------------------|-------------------|--------------------------------|--------------------------------|-------------------|--------------------------------|----|---------------|
| Substile                       |                   |                                | Substile                       |                   |                                |    |               |
| $\frac{1}{4}$                  | 00                | 19                             | $\frac{1}{4}$                  | 06                | 02                             | 15 | 06            |
| 05                             | 02                | 53                             | 07                             | $\frac{1}{4}$     | 04                             | 53 | $\frac{1}{4}$ |
| $\frac{1}{2}$                  | 05                | 33                             | $\frac{1}{2}$                  | 07                | 07                             | 40 | 05            |
| 04                             | 08                | 23                             | 08                             | $\frac{1}{2}$     | 10                             | 43 | $\frac{1}{2}$ |
| $\frac{3}{4}$                  | 10                | 33                             | $\frac{3}{4}$                  | 08                | 14                             | 10 | 04            |
| 03                             | 15                | 06                             | 09                             | $\frac{3}{4}$     | 18                             | 14 | $\frac{3}{4}$ |
| $\frac{1}{4}$                  | 19                | 21                             | $\frac{1}{4}$                  | 9                 | 23                             | 13 | 03            |
| 02                             | 24                | 38                             | 10                             | $\frac{1}{4}$     | 29                             | 35 | $\frac{1}{4}$ |
| $\frac{1}{2}$                  | 31                | 38                             | $\frac{1}{2}$                  | 10                | 38                             | 08 | 02            |
| 01                             | 40                | 42                             | 11                             | $\frac{1}{2}$     | 50                             | 01 | $\frac{1}{2}$ |
| $\frac{3}{4}$                  | 53                | 37                             | $\frac{3}{4}$                  | 11                | 06                             | 26 | 01            |
| 12                             | 71                | 17                             | 12                             | $\frac{3}{4}$     | 87                             | 17 | $\frac{3}{4}$ |

The other two North Reclining as much do also  
Decline 37 deg. 45 min. 41 sec. the Hour Distances  
are as followeth.

|                                 | d. m. sec. |
|---------------------------------|------------|
| North Reclining                 | 19 28 16   |
| Declining East and West         | 37 54 41   |
| Dist. of Merid. and Hor.        | 75 31 21   |
| Substiles Dist. from the Merid. | 48 02 04   |
| The Planes Difference of Long.  | 56 45 32   |
| Styles height                   | 46 26 32   |

K 2

Hour

| Hours from the Subst. | Hour Ar ches. | Hours from the Subst. | Hours from the Subst. | Hour Ar ches. | Hours from the Subst. |
|-----------------------|---------------|-----------------------|-----------------------|---------------|-----------------------|
|                       | Substile      |                       |                       | Substile      |                       |
| $\frac{1}{2}$         | 03            | 12                    | $\frac{1}{2}$         | 08            | 02                    |
| 09                    | 08            | 41                    | 03                    | $\frac{1}{2}$ | 07                    |
| $\frac{1}{2}$         | 14            | 19                    | $\frac{1}{2}$         | 07            | 13                    |
| 10                    | 20            | 12                    | 02                    | $\frac{1}{2}$ | 19                    |
| $\frac{1}{2}$         | 26            | 24                    | $\frac{1}{2}$         | 06            | 25                    |
| 11                    | 33            | 02                    | 01                    | $\frac{1}{2}$ | 31                    |
| $\frac{1}{2}$         | 40            | 13                    | $\frac{1}{2}$         | 05            | 38                    |
| 12                    | 48            | 08                    | 12                    | $\frac{1}{2}$ | 46                    |
| $\frac{1}{2}$         | 56            | 32                    | $\frac{1}{2}$         | 04            | 55                    |
| 01                    | 65            | 44                    | 11                    | $\frac{1}{2}$ | 64                    |
| $\frac{1}{2}$         | 75            | 32                    | $\frac{1}{2}$         | 03            | 73                    |
| 02                    | 85            | 44                    | 10                    | $\frac{1}{2}$ | 83                    |
|                       |               |                       |                       |               | 55                    |

(77)

*A Table of the Content of Cylinders in Ale  
Gallons and Pints, from one to five Feet of  
Diameter, and from one to ten Inches in  
Depth.*

| DIAM. | DEPTH. |      |      |      |      |      |      |      |      |      |
|-------|--------|------|------|------|------|------|------|------|------|------|
|       | 1      | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|       | G.P.   | G.P. | G.P. | G.P. | G.P. | G.P. | G.P. | G.P. | G.P. | G.P. |
| 12    | 03     | 06   | 11   | 14   | 20   | 23   | 26   | 32   | 35   | 40   |
| 13    | 04     | 10   | 14   | 20   | 23   | 27   | 32   | 36   | 42   | 45   |
| 14    | 04     | 11   | 15   | 21   | 26   | 32   | 37   | 44   | 50   | 54   |
| 15    | 05     | 12   | 17   | 22   | 31   | 36   | 44   | 50   | 55   | 63   |
| 16    | 05     | 13   | 21   | 27   | 34   | 42   | 50   | 56   | 62   | 71   |
| 17    | 06     | 15   | 23   | 32   | 40   | 46   | 55   | 63   | 72   | 80   |
| 18    | 07     | 16   | 26   | 35   | 44   | 53   | 62   | 72   | 81   | 90   |
| 19    | 10     | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  |
| 20    | 11     | 22   | 33   | 44   | 54   | 65   | 76   | 87   | 100  | 111  |
| 21    | 12     | 24   | 35   | 46   | 57   | 68   | 79   | 90   | 102  | 113  |
| 22    | 13     | 26   | 40   | 51   | 62   | 73   | 84   | 95   | 107  | 118  |
| 23    | 14     | 30   | 42   | 54   | 65   | 76   | 87   | 98   | 110  | 121  |
| 24    | 15     | 32   | 44   | 56   | 68   | 80   | 91   | 102  | 114  | 126  |
| 25    | 16     | 34   | 47   | 59   | 71   | 83   | 94   | 106  | 118  | 130  |
| 26    | 17     | 36   | 50   | 62   | 74   | 86   | 97   | 109  | 121  | 133  |
| 27    | 20     | 40   | 54   | 66   | 78   | 90   | 102  | 114  | 126  | 138  |
| 28    | 2      | 43   | 58   | 70   | 82   | 94   | 106  | 118  | 130  | 142  |
| 29    | 23     | 45   | 60   | 72   | 84   | 96   | 108  | 120  | 132  | 144  |
| 30    | 24     | 50   | 64   | 76   | 88   | 100  | 112  | 124  | 136  | 148  |
| 31    | 26     | 53   | 68   | 80   | 92   | 104  | 116  | 128  | 140  | 152  |
| 32    | 27     | 56   | 71   | 83   | 95   | 107  | 119  | 131  | 143  | 155  |
| 33    | 30     | 60   | 76   | 88   | 100  | 112  | 124  | 136  | 148  | 160  |
| 34    | 32     | 63   | 80   | 92   | 104  | 116  | 128  | 140  | 152  | 164  |
| 35    | 33     | 67   | 84   | 96   | 108  | 120  | 132  | 144  | 156  | 168  |

*A Table of the Content of Cylinders in Ale Gallons and Pints, from one to five Foot of Diameter, and from one to ten Inches in Depth.*

| DIAM. | DEPTH. |      |      |      |      |      |      |      |      |       |
|-------|--------|------|------|------|------|------|------|------|------|-------|
|       | 1      | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10    |
| 36    | 3 5    | 7 2  | 10 7 | 14 3 | 18 0 | 21 5 | 25 2 | 28 7 | 32 4 | 36 1  |
| 37    | 3 6    | 7 4  | 11 0 | 15 7 | 19 0 | 22 7 | 26 5 | 30 4 | 34 2 | 38 1  |
| 38    | 4 0    | 8 0  | 12 7 | 16 0 | 20 1 | 24 1 | 28 1 | 32 1 | 36 1 | 40 2  |
| 39    | 4 2    | 8 4  | 13 0 | 17 0 | 21 2 | 25 2 | 29 5 | 33 7 | 38 1 | 42 3  |
| 40    | 4 4    | 8 7  | 13 3 | 17 7 | 22 2 | 26 6 | 31 2 | 35 9 | 40 1 | 44 4  |
| 41    | 4 5    | 9 3  | 14 0 | 18 0 | 23 3 | 28 0 | 32 6 | 37 3 | 42 1 | 46 6  |
| 42    | 4 7    | 9 7  | 14 6 | 19 5 | 24 4 | 29 4 | 34 3 | 39 2 | 44 1 | 49 1  |
| 43    | 5 1    | 10 2 | 15 4 | 20 5 | 25 6 | 30 7 | 36 0 | 41 2 | 46 3 | 51 4  |
| 44    | 5 3    | 10 6 | 16 1 | 21 4 | 27 0 | 31 3 | 37 6 | 43 1 | 48 4 | 53 7  |
| 45    | 5 5    | 11 2 | 16 7 | 22 4 | 28 2 | 33 7 | 39 4 | 45 1 | 50 6 | 56 3  |
| 46    | 5 7    | 11 6 | 17 5 | 23 4 | 29 4 | 35 3 | 41 2 | 47 1 | 53 0 | 58 7  |
| 47    | 6 1    | 12 1 | 18 4 | 24 5 | 30 6 | 36 7 | 43 0 | 49 1 | 55 2 | 61 4  |
| 48    | 6 3    | 12 7 | 19 2 | 25 5 | 32 1 | 38 4 | 45 0 | 51 2 | 57 6 | 64 1  |
| 49    | 6 6    | 13 3 | 20 0 | 26 6 | 33 4 | 40 1 | 46 7 | 53 9 | 60 2 | 66 7  |
| 50    | 7 0    | 13 7 | 20 7 | 27 7 | 34 6 | 41 1 | 48 6 | 55 5 | 62 5 | 69 5  |
| 51    | 7 2    | 14 2 | 21 6 | 29 0 | 36 2 | 43 3 | 50 5 | 57 7 | 65 1 | 72 3  |
| 52    | 7 4    | 15 0 | 22 5 | 30 1 | 37 5 | 45 1 | 52 6 | 60 2 | 67 6 | 75 2  |
| 53    | 7 7    | 15 5 | 23 4 | 31 2 | 39 1 | 46 7 | 54 6 | 62 4 | 70 3 | 78 2  |
| 54    | 8 1    | 16 2 | 24 3 | 32 4 | 40 5 | 48 6 | 56 7 | 65 0 | 73 0 | 81 2  |
| 55    | 8 3    | 16 7 | 25 2 | 33 5 | 42 1 | 50 4 | 58 7 | 67 3 | 75 6 | 84 2  |
| 56    | 8 6    | 17 4 | 26 2 | 34 7 | 43 5 | 52 3 | 61 1 | 69 7 | 78 4 | 87 2  |
| 57    | 9 0    | 18 1 | 27 1 | 36 2 | 45 2 | 54 2 | 63 3 | 72 3 | 81 4 | 90 4  |
| 58    | 9 3    | 18 6 | 28 1 | 37 4 | 46 7 | 56 2 | 65 4 | 75 0 | 84 2 | 93 6  |
| 59    | 9 5    | 19 3 | 29 0 | 38 6 | 48 4 | 58 1 | 67 7 | 77 4 | 87 2 | 96 7  |
| 60    | 10 0   | 20 0 | 30 0 | 40 1 | 50 1 | 60 1 | 70 2 | 80 2 | 90 2 | 100 2 |



*The Use of the foregoing Table in Gauging of Tuns, Backs, Coolers, and any other sort of Brewers Cask, especially those that come nearest to a Cylindrical Form.*

**T**O Gauge a Tun, let the Figure 1 in the annexed Page represent a Tun, which is the frustum of a Cone.

Let down the Lead and Plummer to the Chime of the Tun, then the distances in Inches from the Thread *g* to the Edge *b*, which is 28, which take for the mean Diameter; and *g c* the depth 20 Inches.

Seek in the Table for 28 Inches in the first Column on the left hand, under the word Diameter, and because the depth is 20 Inches, you must take the Number under 10 twice, which is 11. 1. and 11. 1. which makes 22. 2. which is 22 Gallons and two Pints.

But if the Liquor in the Tun is no higher than *b. i.* then take the Diameter *b. i.* for the mean Diameter, and 24 Inches *b. g.* the depth thereof is nine Inches.

Then look for 24 on the left side of the Table, and under nine the depth in the common Angle of Meeting you will find 14 Gallons and three Pints, the quantity of the Liquor in the Tun.

*To Gauge a square Back.*

Let the Figure 2 represent a Brewers Back, which is an oblong, whose length *A B.* is 120 Inches, and the breadth *C D* 60 Inches.

Multiply the length by the breadth, and the Product is 7200, which being divided by 282 (the Cubical Inches in an Ale Gallon) the Quotient will be 25 Gallons and four Pints at one Inch depth, which

Num.

Number you multiply dy the depth In Inches, the Product will give the Capacity of the said Back, or the Liquor therein (according to the depth thereof) in Ale Gallons.

If the Backs are of any irregular Form whatsoever, the Area thereof in Ale Gallons, and multiplying that by the depth of the Liquor, and the Product will be the solid Content in Ale Gallons.

Some varieties of which irregular Backs you may see in the annexed Page of the Copper Print.

*To Gauge a Cask by the same Table with the help of a Ruler that hath Inches on it take the Dimensions.*

Let the Figure 3 (in the Copper Print) represent the Cask, whose Capacity is required in Ale Gallons.

Take the Diameter at the Bung, and set it down twice, and the Diameter at the Head, and set it down once, add these together and divide the sum by 3, the Quotient will be the mean Diameter.

Then take the length of the Cask, and note what depths in the Table will answer thereto, take those Gallons in the Table, and add them together, and the sum will be the Content of the Cask.

*Example.*

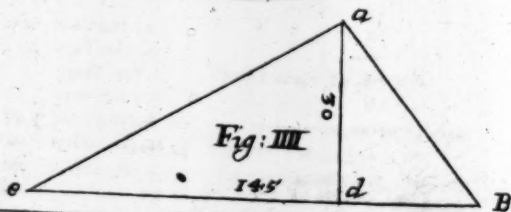
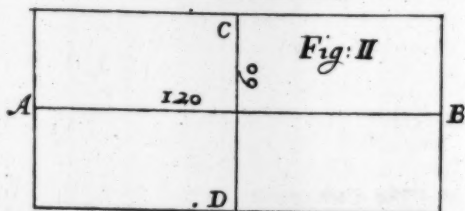
|                     |           |
|---------------------|-----------|
| Bung Diameter is 27 | } Inches. |
| Head Diameter is 24 |           |
| Length ——— is 29    |           |

*To find the Area of a Triangle Back in Ale Gallons.*

Let the Triangle Back be represented in the Copper Plate by the Figure 4, multiply the Base of the Triangle at the top, by half the Perpendicular, and divide the Product by 282.

*Example.*





( 81 )

*Example.*

B d c. the Base 145 Inches, half A. d. 30 Inches  
The Work

145

30

G. P.

282) 4350 (15 3

282

1530

1410

120

8

960

The Cask appears to hold at one Inch depth 15 Gallons, three Pints; and being nine Inches deep, it will be found to hold 138 Gallons three Pints.

*Example.*

Let the Cask be represented by the Figure 3, whose Diameter at the Bung is AB, 27 Inches, the Diameter at the Heads 24 Inches, the length of the Cask CD, 29 Inches.

The Work.

27

27

24

282) 78 (26 Mean Diam.

18

0

29 Inches the length  
of the Cask, take out  
of the Table at three  
times thus,

at 10 Inches deep } 18 6

set down twice } 18 6

9 Inches deep } 16 7

The Content of the Cask is 94  
Gallons and three Pints,

94-3

L

( ( ) )  
O V A T O O

Books Printed for, and Sold by Jer.  
Seller, and Cha. Price, at the Her-  
mitage in Wapping.

F O L I O

**A** *Atlas Terrestis*, Containing Maps of all the  
Empires, Kingdoms, and Countries  
in the whole World.

*Atlas Maritimus*, or a Book containing  
100 Maritime Charts, *Ditto* with 90, *Ditto*  
with 80, &c.

*English Pilot* for the Northern and Ea-  
stern Navigation.

*English Pilot* for the Southern Navigation.

*English Pilot* for the Straits.

*English Pilot* for the West Indies.

*English Pilot* for the East Indies.

*Atlas Celestis*, Containing Hemispheres  
of the Heavens, the Constellations of the  
Stars, and Maps of the Sun and Moon, &c.

Q U A R T O

*Practical Navigation*, being an Intro-  
duction to the whole Art.

And several Books belonging to Navi-  
gation and other parts of the Mathema-  
tics.

OCTAVO

( ( ) )  
OCTAVO.

*A New System of Geography*, designed in a most plain and easie Method for the better understanding of that Science, Accommodated with new Maps of all the Empires, Kingdoms in the whole World; with Geographical Tables, explaining the Divisions in each Map; the double Book containing 80 Maps and Tables, the single Book containing 34 Maps and Tables.

*Anglia Contracta*, or a Book of Maps of all the Counties of *England*, and the Principality of *Wales*, containing 80 Maps, and Tables shewing the Divisions of each Map.

*Atlas Terrestris*, or a Book of Maps of all the Empires, Kingdoms, Regions, Dominions, and Countries; with a brief Description of the Nature and Quality of each Country, containing 124 Maps, &c.

A Pocket-Book, containing several Choice Collections in Arithmetick, Geometry, Astronomy, and Navigation.

A Geographical Description of the Kingdom of *Ireland*, containing Maps of the 4 Provinces, and the 32 Counties divided into Baronies: Collected from Sir *William Petty's* Actual Survey of that Kingdom.

*Atlas*

*Atlas Caeleſtis*, Containing the Systems and Theories of the Planets, the Conſtellations of the Stars, Maps of the Sun and Moon, and other Phenomenas of the Heavens.

A Book of Maps of the XVII particular Provinces of the *Neatherlands*.

*Heraldy Epitomifed*, Containing a ſhort and eaſie way to attain the Art of Emblazonary; Illuſtrated with ſeveral Coats of Arms of Families; Cities, Corporations, and Fraternities.

An Almanack for en Age, for finding the day of the Month, Eaſt, Dominical Letter, &c. for ever.

An Epitome of the Art of Navigation, containing ſeveral Choice Collections, and Concife Contractions and Abreviations, in Geometry, Trigonometry, and Navigation.

Tabular Dialling, ſhewing the making of Horizontal, North and South Dials for all parts of the World.

*Hydrographia Univerſalis*, Deſcribing the Sea-Coaſt, Iſlands, and Principal Harbours in all known parts of the World, uſeful for Merchants and Mariners.

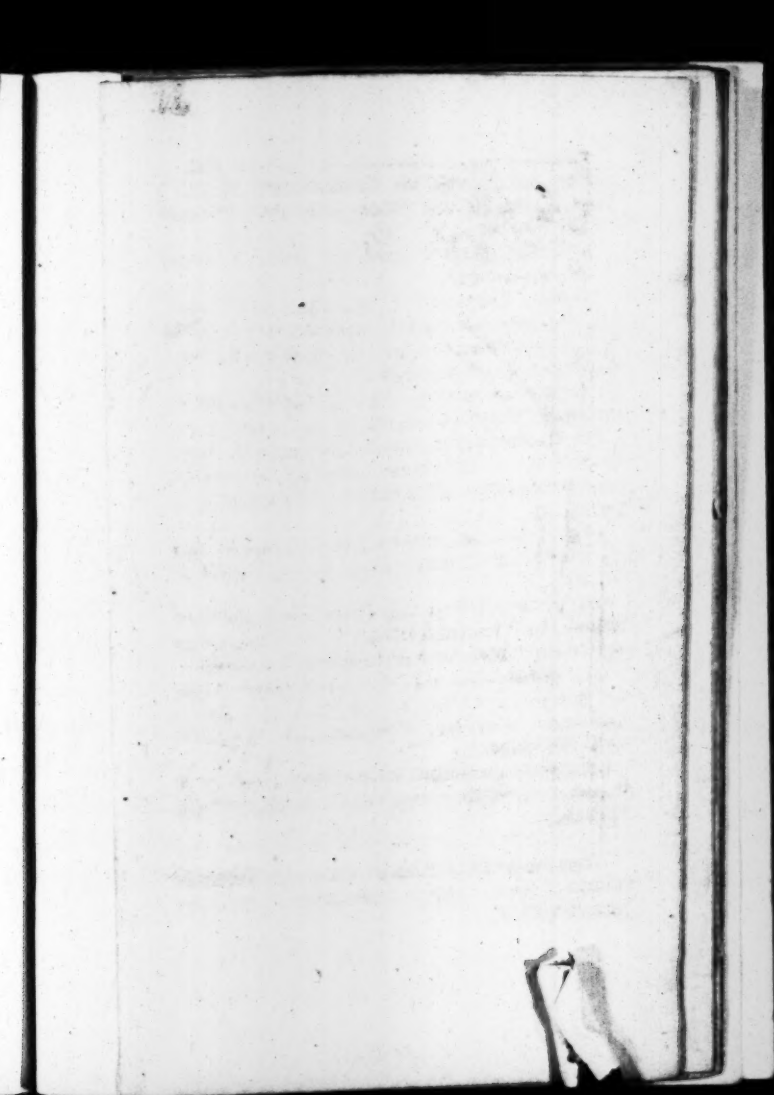
An Almanack for any of the Engliſh Plantations in America, for ever; as *New-England*, *New-Jerſey*, *New-York*, *Penſilvania*, *Virginia* and *Mary-land*, *Carolina*, *Bermudus*.

Scripture-Geography, Containing Maps of all the Countries and Places mentioned in the *Old* and *New Teſtament*.

There are alſo ſoldall ſorts of Mathematical Books, Platts, Charts, Instruments, &c. at reaſonable Rates.







A MAP OF ALL THE  
By Iohn Seller *H*  
to the King



ALL THE WORLD

Hydrographer

the King.



# EUROPE

*Lat. N. 72.*

*As it is now Divided Continues these  
Empires Kingdoms and Estates*

*On the West* { England  
Scotland  
Ireland  
France  
Spain  
Portugal

*On the North* { The Empire of Russia  
Sweden  
Denmark

*In the Middle* { Italy  
Germany  
XVII Provinces

*On the East* { Poland  
Lithuania  
Turkey in Europe  
Petite Tartary

*Lat. N. 35.*

# EUROPE



Europe is bounded on *f* north with *f*. North-Sea. on the East with Asia, on the West with the Atlantick Ocean, and on *f* South with *f*. Mediterranean Sea, in length 2800, & in breadth 1200 miles The Ayre temperate the Soyle fertile Mighty in Trade abounding in Riches excellent in all Arts & Sciences the People of white skins generally professing *f*. Christian faith inhabited by the linage of Iaphet the 3 Principall languages Latin Iutonic & Sclavonian.

# ASIA

*Est N. 72.*



*Est. S. 10.*

# ASIA



Asia is bounded on the West with Europe, on the North with the Main Scythick Ocean, on the East with the supposed Straits of Anion, on the South with part of the Mediterranean. The coasts of India Persia & Arabia is in length 5200, & in breadth 2560 miles. It hath ever been renowned for the Creation of Man, & the place of the birth of our Saviour. In it was the Garden of Eden, it hath sway'd the Scepters of the Monarchs of the Assyrian Babylonians Medes & Persians. The people are generally of a Swarthy complexion & either Pagans or Mahometans, the greatest monarchs of this part are on the North Tartars, on the S & W the Turks & on the E the Chingises and Japonenses.

# AMERICA.

*Lat. N. 80.*

*Septentrionalis  
or N. Northern  
America*

*Is  
Divided  
into*

*Meridionalis  
or S. Southern  
America*

*The Artick Lands*  
*Canada or New France*  
*Virginia and the En  
glish Plantations*  
*Florida*  
*New Mexico*  
*Mexico or New Spain*

*The Isles*

*Antilles*  
*Lucayes*  
*Caribes or*  
*Canibal*

*Terra firma or the  
Main Land*  
*Guiana*  
*Brasil*  
*Peru*  
*The Paraguay or*  
*Rio de la Plata*  
*Chili*  
*The Magellanique*  
*Lands*

*Lat. S. 54.*

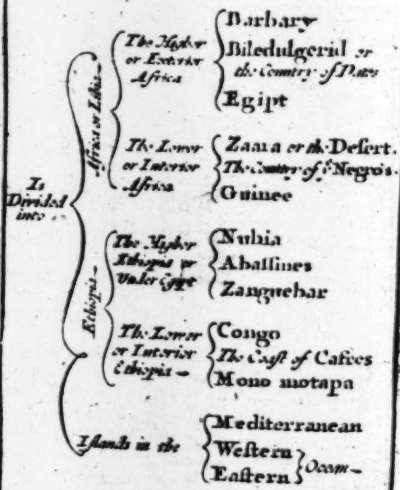


A hand-drawn map of the world, oriented with North at the top. The continents are labeled: 'AMERICA' (North America), 'EUROPA' (Europe), 'AFRICA' (Africa), and 'ASIA' (Asia). The oceans are labeled: 'MAR DEL NORT' (North Sea), 'MAR DEL SUD' (South Sea), and 'OCEANO INDIANO' (Indian Ocean). The map is drawn with simple lines and includes some smaller labels like 'Londra' (London) and 'Peking'.

America is divided into two great Kingdoms, the Northern is  
 Mexicana and the Southern is Brasilia. The first is divid-  
 ed into severall Provinces the principal of which debt Ma-  
 jesty to Great Britains Monarch, this Part was in the Posses-  
 sion of our Nation first discovered by Madric sent to Discover  
 and afterwards by Sebastian Cabot at the charge of King  
 Henry the 7<sup>th</sup>. The second Principale containeth severall Pro-  
 vices belonging to the Crown of Spaine & Portugal. The  
 whole Continent abounded with all things necessary for  
 use of man not only for food as fish fowls & fruits but also  
 for great quantities of Silver that are found in founts thereof

# AFRICA

Lat. N. 35.



Lat. S. 35.

# AFRICA



Africa is bounded on the East by the Red Sea or the Gulf of Arabia, on the West with the Atlantick Ocean on the N. with y<sup>e</sup> Mediterranean sea, & on y<sup>e</sup> S. with y<sup>e</sup> Ethiopick Ocean. Situate most under the Torrid Zone, & is the greatest Peninsula in the world being about 2000 leagues in breadth East & West, & 800 leagues in length North & South. Here is profess'd Mahometane, Egyptian, Christianity & Judayne. This parte is touch'd with y<sup>e</sup> Royall Scepter of England in the strong hold of Tangier.